The Electragist

TRADE MARK REG. U.S. PAT. OFFICE

Vol. 23, No. 12 Official Journal of Association of Electragists INTERNATIONAL OCTOBER, 1924

Here are two pages from the new TORK MANUAL *of Time Controls. Do you want the rest? Sent to any Electragist on request.*

TORK COMPANY, 8 West 40th Street, New York

Ask for Tork Manual

Originally designed to meet the insistent demand for a few outstanding purposes, TORK CLOCKS and TORK TIMERS have surprised their makers by the variety of uses to which they have been put by those who have learned of their advantages. We have collected the reasons for these uses and condensed them for your information.

How to Buy "Circulation" in Store Window Lighting

Count the people who pass your store during five-minute periods at seven, eight, nine, ten and eleven o'clock on a mid-week evening. Add total and multiply by twelve. Assuming that all of the people pass twice, divide the total by two. This will give you a conservative estimate of your average evening window "circulation" throughout the year.

As a window display of actual goods has a greater value per window-shopper, than a page advertisement has per reader, multiply this number by the lowest page rate in any magazine or newspaper per copy, which is approximately $0.003. The result will indicate what you can profitably afford to spend per night on the lighting of each ten-foot window.

EXAMPLE:

Number of persons passing window from—	
7:00 to 7:05 p. m.	20
8:00 to 8:05 p. m.	35
9:00 to 9:05 p. m.	10
10:00 to 10:05 p. m.	20
11:00 to 11:05 p. m.	15
Total for five 5-minute periods	100
Estimated total for five hours (100x12)	1200
Assuming all people pass twice, divide by 2, leaving	600
Multiply by lowest page advertising rate per copy	$0.003
Budget for lighting per window per night	$1.80

If electricity costs 10¢ per kilowatt hour, and you burn window lights five hours every night, this will pay for the use of thirty-six 100-watt lamps or seven 500-watt lamps in each ten-foot window.

One-quarter of this amount of lighting will stop as great a percentage of passersby, as the percentage of "readers" who read advertisements. This means that with ordinarily good window lighting, used every night, you are buying the best advertising any store can get for less than one-quarter the cost of other advertising. But window-shoppers are much closer to the buying point than readers of advertisements. Your window circulation is worth more per thousand than any other circulation you can buy.

Then why not buy it on the basis of cold calculation? Count the passersby. Use the actual rate you pay for electricity. And find out how much per night you can safely afford to invest. Then make sure you invest it, and remember that the use of 3,000 watts in lighting a ten-foot window will make almost twice as many people (out of the same number of passersby) stop to look, as the use of 900 watts. See the published results of numerous tests. When you make your actual calculations you may be surprised to find that the resulting appropriation will buy something as follows:

75% of it will more than pay for enough light to make your windows pull to the limit, if your lighting is right.

20% spread over one year will pay for installing the necessary reflectors and lamps to keep your lighting right.

Less than 5% spread over one year, without even bothering to capitalize it, will pay for installing a Tork Clock to keep your lighting on the job without wasting your money and (what is of much greater importance) WILL SAVE YOUR WINDOW CIRCULATION.

"Ring and Talk—Don't Walk"

DE VEAU

Lamp-Type "Intertalk" Telephone Switchboard System

Pattern No. 1172

RECOMMENDED FOR

Banks, Commercial Institutions, Schools, Hospitals, Factories and High-class Apartment Houses where service is desired between Switchboard and Sub or Outlying Stations.

Pattern No. 2530

Pattern No. 287

Pattern No. 190

Table Type Lamp Signal Switchboard

Pattern No. 385

Pattern No. 2640

Pattern No. 2524

MANUFACTURED BY

STANLEY & PATTERSON

INCORPORATED

GENERAL OFFICES AND FACTORY

250 WEST ST.

NEW YORK, U. S. A.

If De Veau Catalog No. 40 Is Not In Your Files Send For Same

THE ELECTRAGIST, October, 1924, Vol. 23, No. 12, $2.00 per year, 20 cents a copy. Published monthly at 100 Liberty Street, Utica, N. Y., Association of Electragists—International, 15 West 37th St., New York, N. Y. Entered as second class matter September 1, 1919, at the Post Office at Utica, N. Y., under the act of March 3, 1879.

We will be glad
to welcome you
at Booth No. 89

A-A WIRE CO., Inc.

110 East 42nd Street, New York

In October "Good Housekeeping," now out.

Candles are the Vogue
Make Over Your Fixtures
with
Can-del-ite
TRADE MARK
Old-fashioned fixtures like ←this can be made to look like this→
No Wiring—No Tools
Just take them home and put them on. You can take them with you when you move.
PRICE $1.00 Each
(Bulb and Shade Extra)
For Sale at
Electric Shops, Fixture Studios, Hardware and Department Stores
To insure getting the genuine Can-del-ite, we suggest that you tear this advertisement out and take it with you.

Can-del-ite

TRADE MARK

Our campaign of national advertising is swinging along.

Already dealers are getting an increasing number of calls for this profitable specialty.

But the big business will come in October and November.

Don't let your competitor beat you to it in corralling the local results of our national advertising.

In November "Good Housekeeping," out October 20.

OLD-FASHIONED FIXTURES LIKE THIS
Candles are the Vogue
ARE MADE TO LOOK LIKE THIS
Just take them home and put them on
You can take them with you when you move
Transform Your Lighting Fixtures with
Can-del-ite
TRADE MARK
Easily applied by anyone No Wiring - No Tools
For Sale at
Price $1.00 Each (Bulb and Shade Extra)
Electric Shops, Fixture Studios, Hardware and Department Stores
To insure getting the genuine Can-del-ite, we suggest that you tear this advertisement out and take it with you.
Henry D. Sears, Gen. Sales Agent
Boston, Massachusetts
STANDARD
WEBER WIRING DEPENDABLE DEVICES
SINCE 1895

Our sales helps are free for the asking.

And remember that Weber distributors have Can-del-ites in stock.

HENRY D. SEARS

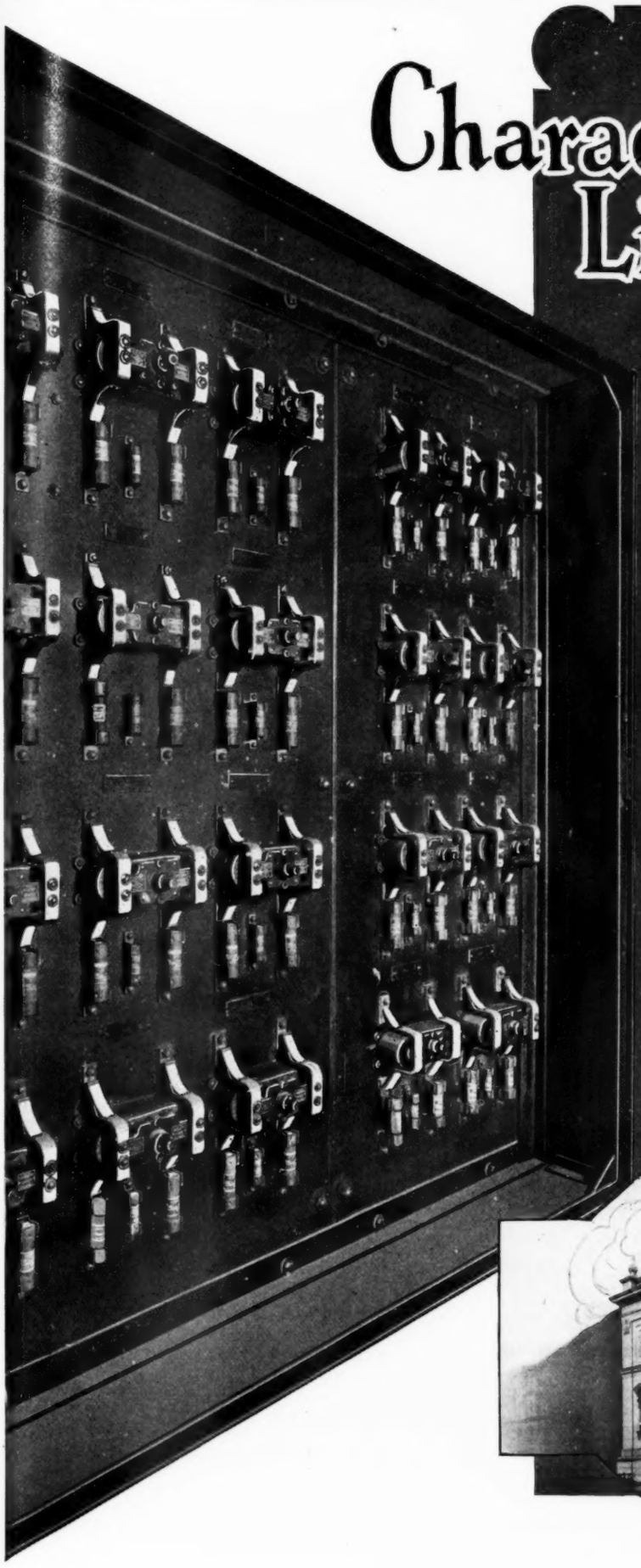
General Sales Agent

WEBER WIRING DEPENDABLE DEVICES

80 BOYLSTON STREET
BOSTON 11, MASSACHUSETTS

DISTRICT SALES REPRESENTATIVES IN
New York, Philadelphia, Detroit, Chicago, San Francisco, Los Angeles, Seattle

Characteristic Lighting



THERE is an impressiveness about the interior illumination of the Second Church of Christ Scientist, in New York City, that is characteristic of the advanced attainments in church architecture.

A soft glow emanates from the indirect lighting arrangement — no lamps are visible. The effect is inspiring—

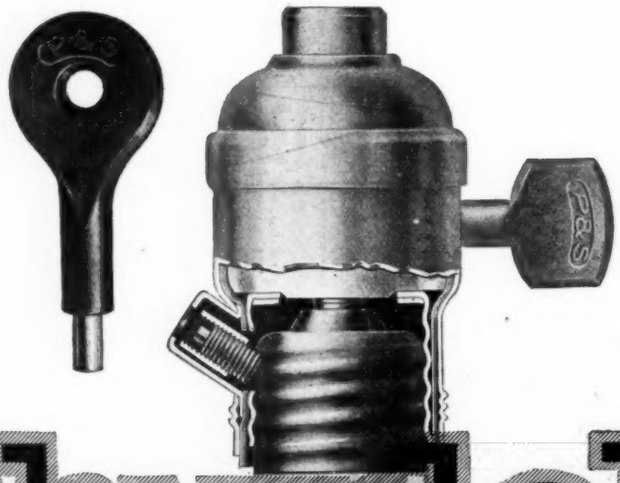
—and

"DIAMOND-H"

is directly responsible for the unfailing control of this illumination—20 No. 790 "DIAMOND-H" Remote Control Switches mounted on a panel in the basement are operated through "DIAMOND-H" Momentary Contact Switches.

THE HART MFG. COMPANY
Hartford, Conn.

NEW YORK SAN FRANCISCO
BOSTON LOUISVILLE
CHICAGO CLEVELAND
DENVER DETROIT TORONTO



Shurlok

"The Socket that Locks"

Every lamp is important—the fewer the lamps—the more important is each lamp

Proper lighting means quick, accurate work. It means safety. It means better working conditions.

SHURLOK *Keeps the Lamp on the Job*

SHURLOK is a practical, economical means of locking electric lamps—and only a Shurlok Key will operate a Shurlok Socket—no other tools will pick the lock.

If you haven't the Key—

It is Impossible to Remove This Lamp from the Socket because it is a

Shurlok

—the Socket That Locks

Shurlok

Prevents Darkness

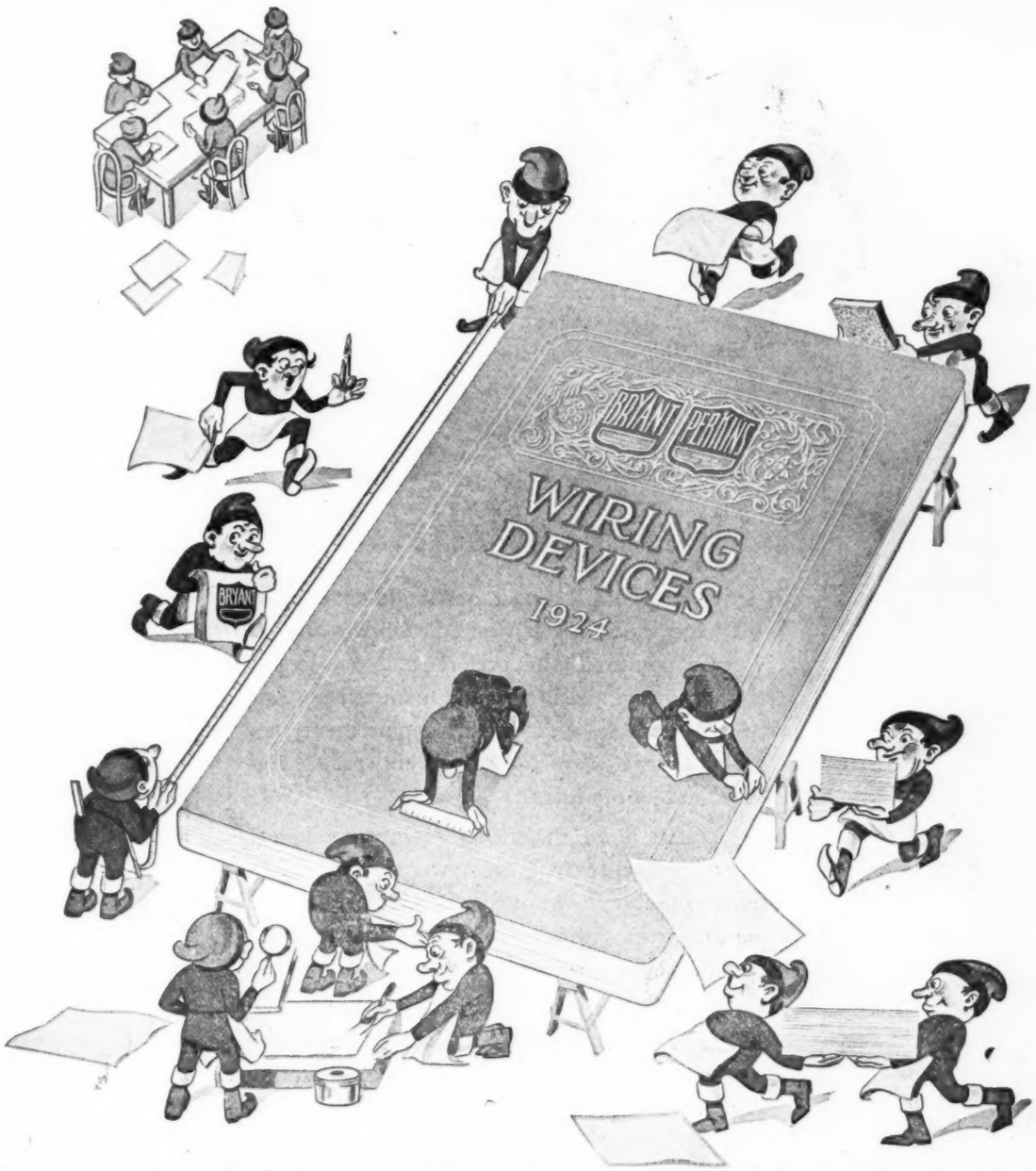
Darkness means danger, disorder and discontent.

Let us show you a SHURLOK Socket.

Use your Letterhead today

Pass & Seymour, Inc.

Solvay Station, Syracuse, N.Y.



Every entry has been checked, every picture has been brought up-to-date, every page has been printed and bound and packed and either shipped or is waiting to be.

The new Bryant catalog is ready for you, and it is the most complete and convenient catalog of wiring devices you could ask for.

- ✓ It illustrates, describes and lists more than five thousand wiring devices.
- ✓ It is indexed alphabetically and numerically and you can find what you want almost instantly.
- ✓ The pictures are on the page margins to help you find what you are looking for.
- ✓ It shows wiring diagrams for dozens of purposes.
- ✓ It has all the new standard wiring symbols ready for your use.
- ✓ No wonder it is sometimes called "The Bible of the Business."

If you haven't yet received your copy tell us so immediately. We have one for you.

"A Superior Wiring Device for every Electrical Need"

BRYANT
SUPERIOR WIRING DEVICES

THE BRYANT ELECTRIC COMPANY

1421 State Street, Bridgeport, Conn.

NEW YORK, 342 Madison Ave. CHICAGO, 844 West Adams St. SAN FRANCISCO, 142 New Montgomery St.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Preferred Fittings

WHEREVER a neat, quick and economical job of wiring is desired, "Unilets" are invariably preferred. This preference is due largely to their individual design and manufacture. And being adaptable to any fitting requirement, they simplify installation operations and reduce material and labor costs.

"Unilets" are light, strong, easy to handle and install; provide 50% more wiring space, low transportation charges, and eliminate breakage in handling and shipping. Made with flat bottoms they fit securely against wall or ceiling.

"Unilet" distribution is nation-wide, which assures prompt deliveries and affords standardization of these fittings for all wiring work. Catalog 9-D contains hundreds of fittings, pictorially indexed. If you haven't a copy, write for one today.

APPLETON ELECTRIC COMPANY
General Offices and Factory
1704 Wellington Avenue
CHICAGO

Type "WDC" Unilet with 3-wire Porcelain Cover

Type "SE" Unilet with Pony Receptacle

Type "GN" Unilet with Octagonal Porcelain Receptacle

Type "FS" Unilet with Cover for Plug Receptacle

Type "T" Unilet with "Unitap" Connection Block

Type "GSC" Unilet with Operating Handle for Snap Switches

Type "MSC" Unilet with Receptacle and Special Cover

Type "GN" Unilet with Inter-Connecting Block Body

Type "FWC" Unilet with Cover for "Duplex" Receptacle

Type "FS" Unilet, 2-gang with Cover for Toggle Switches

APPLETON UNILETS

STANDARD FOR BETTER WIRING

"Federal Strips Easily"

"Yes Sir! Right there is one of the greatest advantages of *Federal* Single Strip Armored Cable. And the metal covering comes off whole—no unravelling to waste time and patience. Me for *Federal* every time—and you too, once you try it"

Federal Armored Cable

Cuts easily and cuts clean.

Strips easily.

Makes all standard connections.

If you haven't used Federal Cable, there's a sample due you. Send for it.

Federal Armored Cable Company
520 West 41st Street, New York City

Manufacturers of
Federal Armored Cable and
Flexible Steel Conduit

17383

Approved by the Underwriters Laboratories, Inc.

FEDERAL

Single Strip INTERLOCKING ARMORED CABLE

Telling your story from House to house

General Electric Advertising in the national magazines

is telling from house to house the complete story of electrical convenience and of your service in making the home up-to-date electrically.

This national advertising and the book—"The Home of a Hundred Comforts," put before your prospects every feature of electrical convenience down to the smaller items. The advertising is now emphasizing the G-E Wayne Bell Ringing Transformer, an electrical specialty that has in so many instances proved to be the entering wedge for additional wiring and increased business.

MERCHANDISE

GENERAL

48-24 GENERAL ELECTRIC COMPANY,

Tell your story at your salesroom and cash in

Make customers out of the readers of General Electric national advertising who want their homes to have the conveniences and comforts told about in "The Home of a Hundred Comforts."

Tell them the story of your service and cash in.

Show in your window Bell Ringers and other G-E quality material that you use to make your work dependable and their homes more comfortable and convenient.

Use the G-E Complete Wiring Displays. They catch the eye of every passer. Distribute the G-E folders telling about various items of home convenience. There is always something new for you to send out.

Use advertising in local newspapers to keep people reminded that *you* are prepared to make their homes "Homes of a Hundred Comforts."

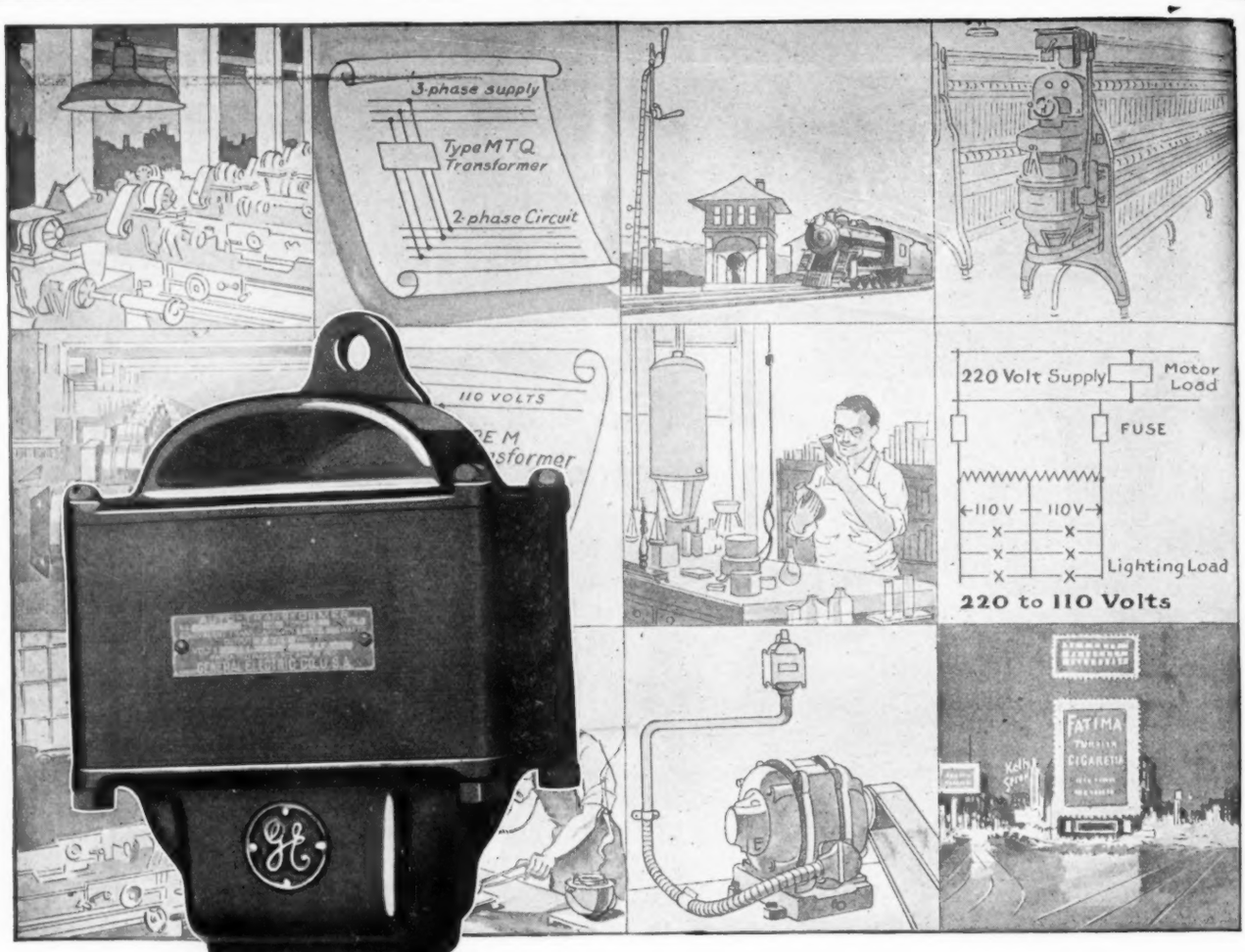
Ask your G-E Distributor for all the G-E dealer helps.

Be sure to see the General Electric Exhibit at the Convention.

DEPARTMENT

ELECTRIC

MERCHANDISE DEPT., BRIDGEPORT, CONN.



Just the right transformer for just the power you need

If your power changes from 2-phase to 3-phase and you wish to adapt existing equipment—if you want 110-volt lighting from a higher-voltage motor circuit—if you must operate low-voltage motors on standard circuits—in fact, if you need a small alternating current, low voltage, for any purpose, use a Type M Transformer.

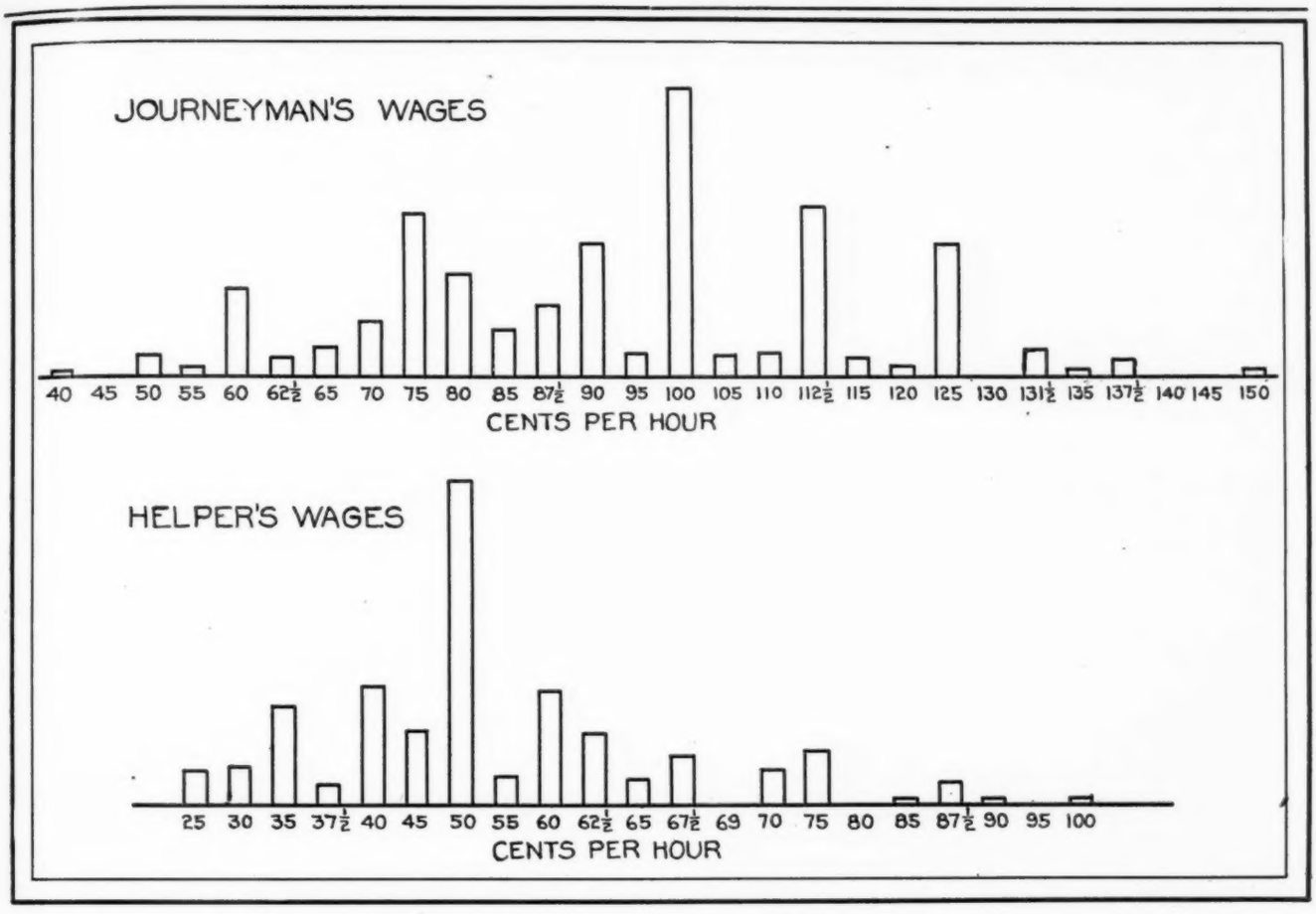
Type M's are meeting these many demands for transformers of small capacity—15 to 5,000 watts, up to 600 volts, primary.

Unusual low-voltage requirements can also be met, for "specials" are readily built from standardized "M" parts. Therefore, whatever your problem, tell the nearest G-E Office. Simply state your supply voltage and frequency, the voltage desired and amount (kv-a.) to be transformed.

General Electric Company
Schenectady, N. Y.
Sales Offices in all Large Cities

33A-173

GENERAL ELECTRIC



Charges for Labor

An analysis of the wage rates for journeymen and helpers in over 400 cities together with a study of labor mark-up on small time and material jobs

WHEN billing a customer for a small job on a time and material basis what should be charged for labor?

A study has recently been completed of wage rates and time charges for wiremen and helpers in more than four hundred places in the United States in order to find our present practices. The study was made not to prove any preconceived notions but solely to learn the facts.

Analysis is made of wage rates, both union and open shop, for journeymen, wiremen and helpers; relation of helper's to journeyman's wages, and markup of both journeyman's and helper's wages. These are all charted in the accompanying diagrams to show relationships.

JOURNEYMAN'S WAGES—As would naturally be expected, the wage scale is "all over the lot." The lowest rate reported was 30 cents per hour. That rate was reported from Elizabeth City, N. C., where the rate is from 30 to 50 cents, Gastonia, N. C. reported 35 cents per hour. The highest rate was $1.50 per hour reported from St. Louis.

In almost 20 percent of the cities that reported, the journeyman's scale has a spread. The spread was not particularly large in any place, being as a rule between ten and twenty cents an hour, but none was over twenty five cents. As was to be expected the practice of spreading journeyman's wages was confined almost entirely to open shop cities. It was interesting, however, to note that in three union cities there was a spread in the journeyman's wage.

The study showed that the union scales are higher than the open shop scales. The highest open shop wage was $1.31 per hour. The lowest union rate was 75 cents per hour. Ninety percent and over of the open shop scales are at $1.00 per hour or less, while more than 80 percent of the union scales are $1.00 per hour or more.

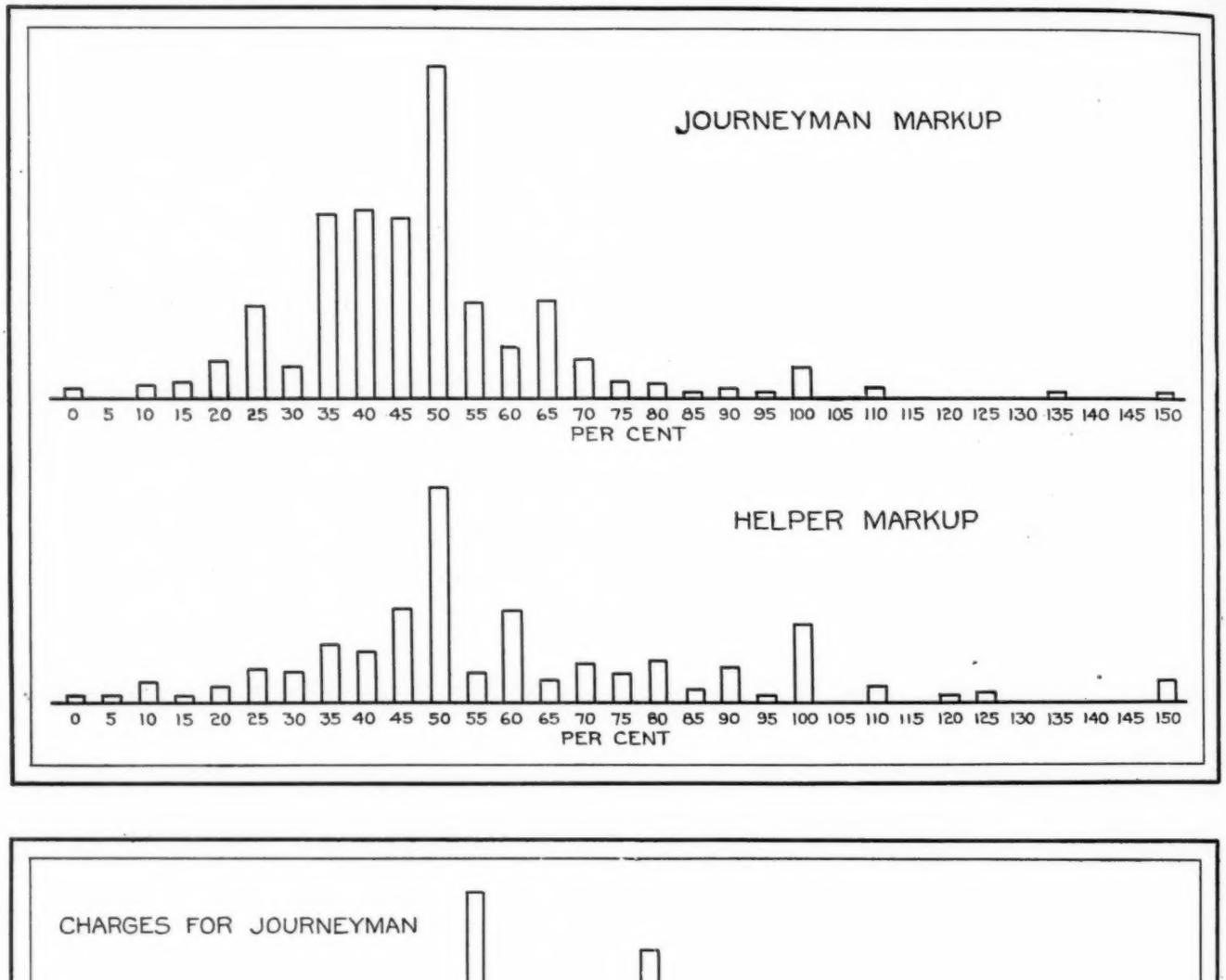
The favorite open shop rates in order of importance are $1.00 per hour, 75 cents, 90 cents, 60 cents, 80 cents and $1.12½.

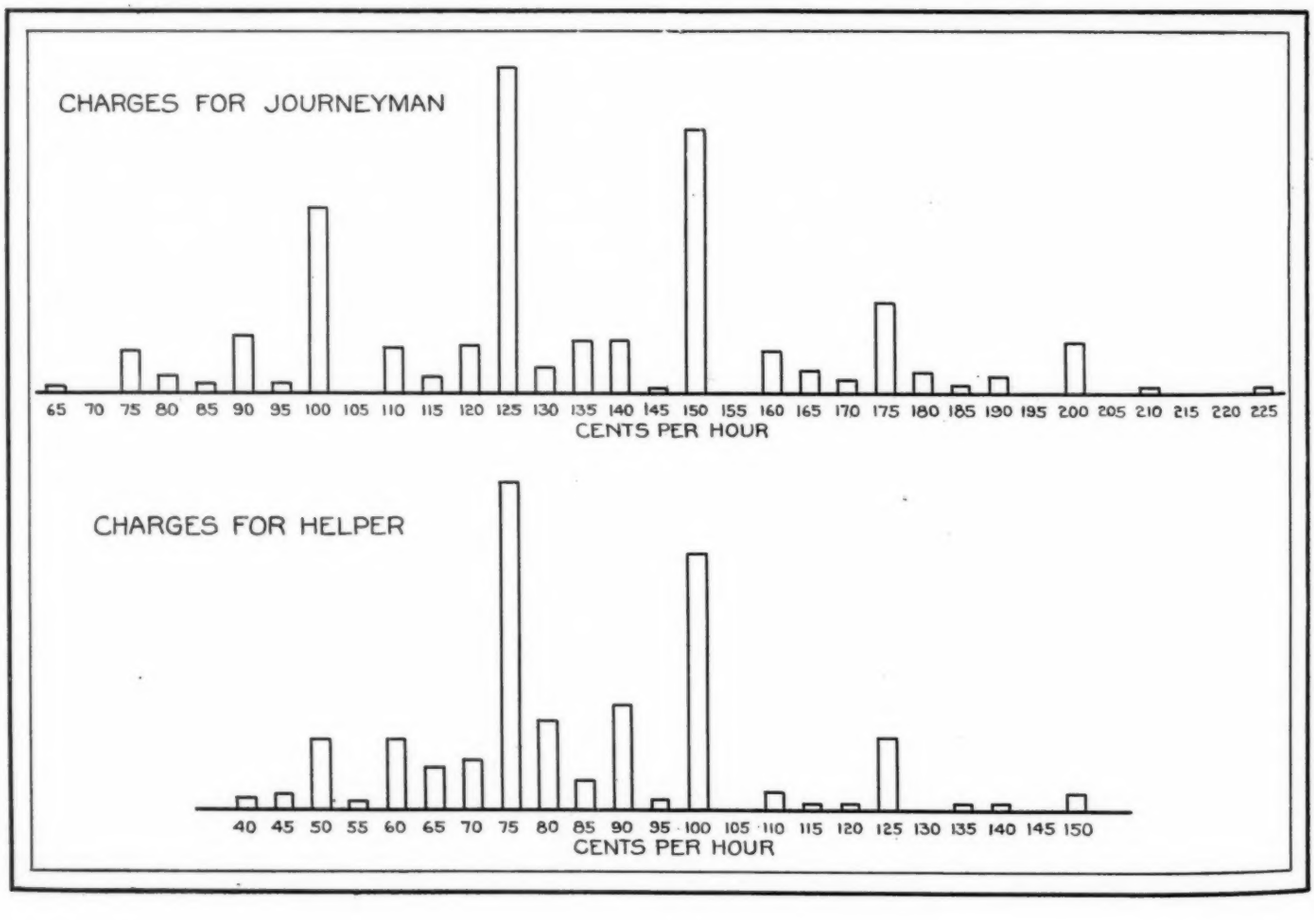
The favorite union shop rates in order of importance are $1.00, $1.25 and $1.12½.

HELPER'S WAGES—There is less variation in helper's wages than in journeyman's, but there is a greater tendency to spread. Moreover, in this instance union rates seem to have spread proportionately as much as the open shop rates. Even so, the spread rates for helpers occur in only a little more than a quarter of the places reporting.

Some of this spread was probably due to different rates in different shops while some was due to a graduated scale dependent upon the time the helper had spent in the trade.

From the data received it would seem that the practice of graduating the helper's scale was by no means general. This brings up the old question of whether a man who puts in, say four years as a helper, is worth the same


JOURNEYMAN MARKUP
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150
PER CENT
HELPER MARKUP
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150
PER CENT


CHARGES FOR JOURNEYMAN
65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225
CENTS PER HOUR
CHARGES FOR HELPER
40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150
CENTS PER HOUR

each year. Is an ungraduated scale the best thing for the helper especially in his third and fourth years? In those two years he is able to do frequently almost as good a job as a journeyman. What inducement is there for him to do that kind of a job if he is getting so much less than the journeymen? Moreover, when a helper does feel that way he frequently stops learning and when his four years are up we are likely to get another half baked wireman—undependable, insincere and a loafer.

The favorite rate for helpers is 50 cents per hour; 40, 60 and 35 cents per hour are other favorites but to a much smaller extent.

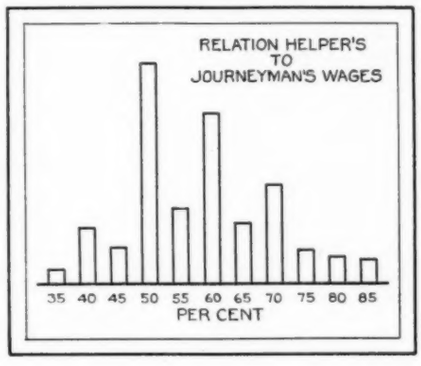
RELATIONS OF HELPER'S WAGES TO JOURNEYMAN'S WAGES—Is there any relation between the scale for helpers and that for journeymen? In some cases YES, but in a great many cases NO. As will be seen from the diagram, however, about half of the helper's scales are between 50 and 70 percent of the journeyman's scale. The favorite thing to do, it seems, is to give the helper half what the journeyman receives.

Less than 10 percent of the helper's rates are below half the journeyman's rate and of these six are less than 40 percent of the journeyman's rate. As a counter-balance, sixteen places reported a helper's scale that exceeded 75 percent of the journeyman's scale, one being 90 percent.

The mathematical average wage for a journeyman, according to the figures gathered in this survey, is 96 cents per hour. The mathematical average charge by the contractor for a journeyman's time is $1.34 per hour. This would mean a markup of 40 percent. There is some doubt as to the sufficiency of this markup in view of the fact that the time and material work for which these charges apply is small, such as alterations and additions, since on such work the overhead is as a rule considerably higher than the average. It should be noted also that the average markup of 40 percent was made possible by a few courageous contractors who mark labor up 100 percent or more.

As seen in the diagram, $1.25 per hour is the favorite price to charge, next is $1.50 per hour, then $1.00 per hour. The favorite wage rates were $1.00, 75 cents and 90 cents. It would appear as though labor markup was on the basis of what the contractors think the public will pay rather than on actual cost, overhead and profit.

Looking at the markup diagram we notice the bulk are between 35 and 55 percent although a fair number held to 25 percent and 67 percent. Very few have the courage to charge 100 percent or more; there are more who charge 20 percent and less. There are even some who claim to make no profit on labor. Those men evidently go out on the job



themselves and if they have a man to help them they charge the customer only what it actually costs them.

The study shows that all but 37 out of the more than four hundred cities reporting charge at least $1.00 an hour for a journeyman's time. Some of those under $1.00 made a fair markup because the wage rates were very low. Most of them however, did not begin to cover what would be considered even average overhead.

When one considers the labor bills charged by plumbers and some of the other trades certainly the electrical contractor can never be accused of charging all the traffic will bear.

At this point some concrete suggestions might not be amiss. Inasmuch as the overhead on the small job is generally high and may easily average 40 percent of the *selling* price, not *cost*, and inasmuch as most contractors believe that they should secure a net profit on the average of at least 10 percent, and higher on these small jobs, it is apparent that the selling price on these small jobs should average at least a 100 percent markup of time and material costs.

There will of course be some jobs where the overhead will be lower than the average, just as there will be jobs with higher overhead. Work such as we are discussing, however, is too small to figure so closely so that averages must apply.

Where labor is marked up only 50 percent it means that two thirds of the selling price is cost and one third markup. Out of this 33⅓ percent must come overhead and profit. How much profit is there in it for the contractor?

Take a case of a job calling for the installation of a single base board receptacle on which there was say, three hours of labor at $1.00 per hour and material, we will say, costing another dollar or $4.00 in all. If this job were marked up 50 percent the contractor would have $2.00 with which to pay for the time spent in getting the job, booking and billing it, getting the materials together, inspecting the job, keeping the wireman's time, and the proportionate amount of the fixed expenses like rent, telephone, insurance, etc., etc. What is left is profit and it is at once apparent that if any is left that it is so insignificantly small as to make such jobs decidedly unattractive.

With an average markup of 40 percent one can readily imagine what happens at least half the time. It means on the average an allowance for overhead and profit of 28½ percent.

Those who markup 25 percent or less have from 20 percent down for their overhead and profit.

TIME CHARGE FOR HELPERS—In about half the places the charge is between 75 cents and $1.00 with 75 cents the favorite and $1.00 a fair second.

Markup on a helper's wage more frequently goes up to 100 percent and beyond that on a journeyman's wage. In fully a quarter of the places the markup reaches this figure. The contractor probably figures that it is easier to mark up helper's time than journeyman's because it is not so large.

But six cities reported a markup of helper's wages of less than 50 percent while only 20 percent of the places markup less than 75 percent.

The Duty of Electragists

"Apart from the danger to life, correct electrical construction will save millions of dollars worth of property. Every year the total of preventable fires mounts to staggering figures and one of the greatest contributing factors to this is the prevalence of faulty electrical wiring. You will render a service to the public and will save lives and property by getting out and teaching the public that these things can be done in a careless and dangerous manner, but the correct way is to have it done by a man trained in the work, certified as a capable electrician and a member of your organization."—B. L. Hamner, before the Florida Association of Electragists.

Some Interesting Cost Data Compiled on a Large Office Building

By R. A. GOELLER
Vice-President, Hatzel & Buehler, Inc., New York

THE idea of divulging confidential information in the form of cost data to competitors is not altogether new or novel, nor can it be said to be purely altruistic as it has for its basis, the most powerful and beneficial of all agencies, Cooperation, or the Brotherhood of Interests, and when these are once established in an industry, the good therefrom cannot be disputed.

Subscribing to this idea in the August, 1923, issue of The Electragist, our company published an article compiled by Campbell Higgins, giving unit labor costs actually experienced on a large industrial operation in which the character of the work was entirely exposed.

We have recently compiled costs on a large commercial building in which practically all of the work, except feeders, was concealed and a comparison of these figures should be interesting to the industry at large. This data will be found in the accompanying charts with attendant explanatory notes.

Pick-up and Nippling Expensive

Cinder concrete arches, suspended ceilings with clearance under beams between bays, cement floors with 3-in. fill, are provided for the installation of the work. The exterior walls and all columns are furred with terra cotta and partitions are of the same materials. All mechanical piping systems are furred in with metal lath, providing many convenient spaces at columns for the installation of lighting and low tension side wall work.

FIGURE 1 covers the combined unit cost of ½ in. and ¾ in. conduit, including 3,148 ceiling outlets and approximately 2,170 switch and receptacle outlets. For the months of February and March, it is interesting to note that even though the quantities are small, the unit cost is low. This is easily explained by the fact that the work consisted primarily of extending conduits from panelboxes and conduit ends pointing out of an adjoining completed section of job to approximately their final location on absolutely clean floors. In April, as the amounts of material installed increased, the labor cost rose slightly, due to the more involved character of the work.

In the month of May, we see that the maximum amount of conduit for any month had been installed and that the unit price up to this point is still very low though gradually rising. For June, there is a sudden drop in the amount of materials installed and a sudden rise in the unit cost, proving conclusively that the pickup and nippling out process of the roughing operation is comparatively expensive and a point which should be given special attention in making up units for extra work, tenant change, charge, etc.

Lower Costs on Larger Conduits

From July to October, the amount of unit costs and material for each intervening month varies but slightly and the unit for the entire amount is $0.0663 per foot as noted.

FIGURE 2 covers 1 in. and 1¼ in. conduit and the process of installation was quite identical to that described for the ½ in. and ¾ in. conduit on Fig. 1.

September shows a marked rise in unit cost which is explained by the greater difficulty of handling the larger size conduits in the pick up process. The work in October consisted of straight nippling out and its simplicity is reflected in a lower cost.

Comparison of the data in Fig. 1 for ½ in. and ¾ in. conduit with that in Fig. 2 for 1 in. conduit indicates a rather unusual condition, in that the larger size conduit has been installed for a fraction of a cent less than the smaller sizes. Analysis of this shows that the 1 in and 1¼ in. conduit was almost entirely "ties" between main and subdistribution boxes consisting of relatively long runs, and with consideration for this, the unit of $0.0635 per foot is, in my opinion, exceptionally good.

FIGURE 3 covers 1½ in. conduit and the same general characteristics of Figs. 1 and 2 are observed. In July, there was practically no conduit installed and the amount of material and unit cost is zero but a considerable rise in unit cost for August is noted over June, although the amount of material installed is considerably less and is again representative of costs at this period of the operation.

The unit cost of $0.0584 per foot for 1½ in. conduit being even lower than for either the unit costs in Figs. 1 and 2, represents a rather unusual scaling down of costs against the usual upward trend of costs as the size of conduit increases and is explained by a greater simplicity of the work.

FIGURE 4 covers combined riser conduits from 2 in. to 3½ in. inclusive and as these conduits were installed simultaneously, no segregation was practical. The trend of costs is generally the same as noted for the smaller sizes of conduit, although the month of May indicates a peculiar rise in unit cost not generally noted in the preceding charts and when it is explained by the fact that it is due to a personal inefficiency the value of these charts in proving this fact can easily be realized.

The unit cost of $0.209 per foot for conduit that is mostly vertical is consistent with sizes of conduit and construction of this character.

Switch and Receptacle

FIGURE 5 covers switches and receptacles complete with plates. The unit price is fairly constant regardless of the amount installed. December's rise in costs is explained by the fact that several men were used on this work who were "filling in", awaiting resumption of work on their own jobs or for new jobs to start.

FIGURE 6 covers No. 12 and 14 single circuit wire and brings out strongly the point that quantity means lower costs and the falling off of materials installed is covered by the to-be-expected rise in unit costs.

The character of the building did not lend itself to large duplicating operations in the making up of nipples between outlets. Forming of elbows on

bending machines was the only process of this nature possible, and as elbow formers were used up to 2 in. conduit, it was unnecessary to do any nippling, as all elbows were bent to length, thus avoiding the cutting and threading attendant to standard elbows.

No cost chart is given for the underfloor duct system but it was found that for the 5,000 ft. installed, including 195 floor junction boxes, the unit cost was

(Continued on page 34)

Data on Total Material Installed Monthly and the Labor Cost on Standard Oil Building

One helper per journeyman. Journeyman, $10.00. Helpers, $6.50.

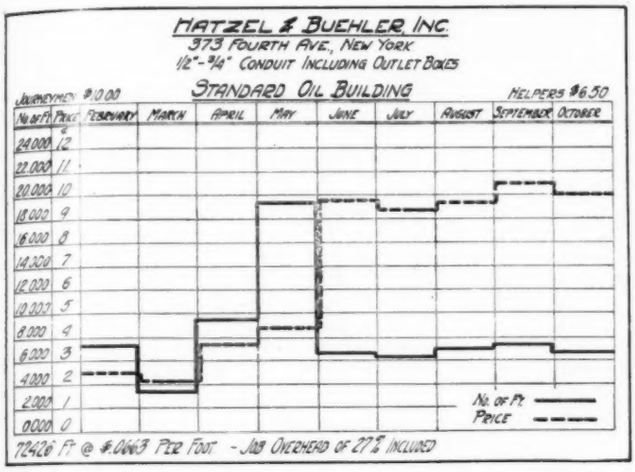


Fig. 1. ½-inch and ¾-inch Conduit Including Outlet Boxes

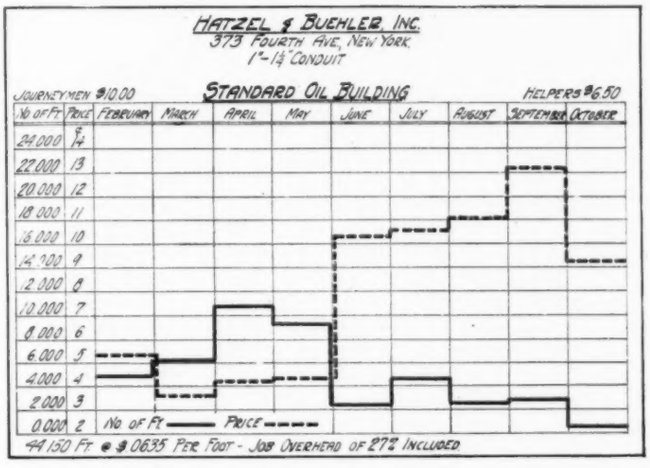


Fig. 2. 1-inch and 1¼-inch Conduit

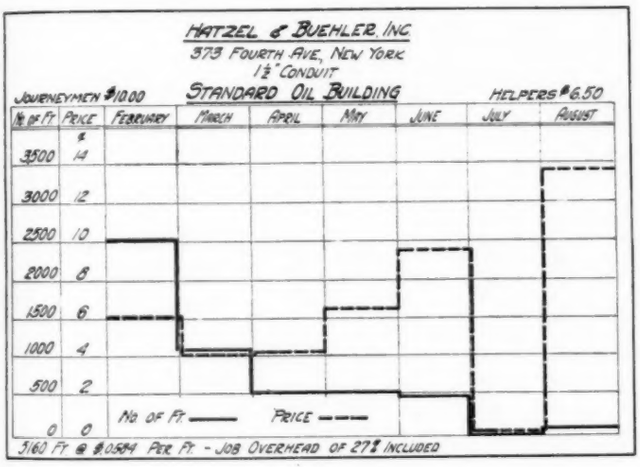


Fig. 3. 1½-inch Conduit

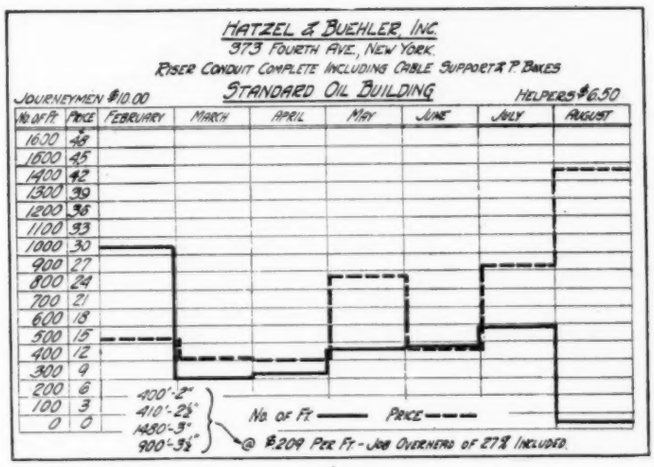


Fig. 4. Riser Conduit Complete, Including Cable Support and Pull Boxes

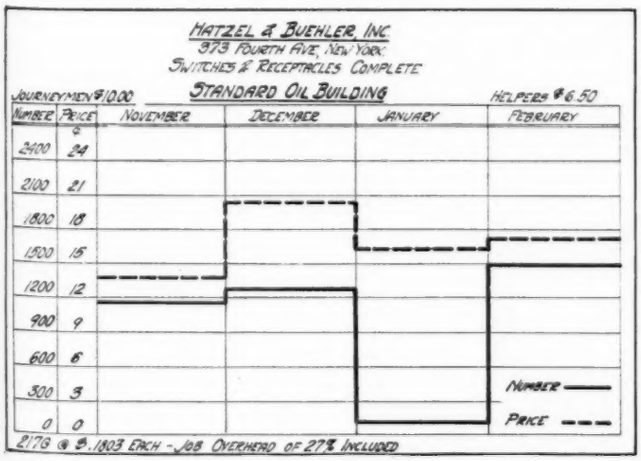


Fig. 5. Switches and Receptacles Complete

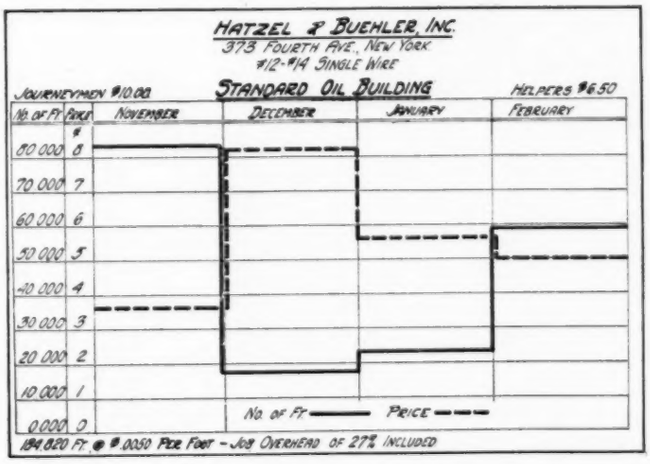


Fig. 6. Nos. 12 and 14 Single Wire

C. C. Bohn

Selection and Training of Salespeople for Electric Shops

By C. C. BOHN
President, C. C. Bohn Electric Company, New York

IN the selection of salespeople for a retail electric shop, an essential point to look for is personality, for much depends on the individual's appearance, manner and integrity. The visitor to the up to date electric shop expects to find a sales person, with good personality, who is well mannered and intelligent. These three qualities are requisite to proper training in the presentation and sale of the various electrical appliances. The previous occupation of applicants, if in a line foreign to the electrical, may be considered only as it helps to determine the likelihood of their responding to training in a line of work which is new to them.

The retail electrical shop requires sales people specially trained for this business and as the selling of electrical appliances at retail is comparatively a new business, as compared for instance with the selling of housefurnishings, hardware, dry goods, etc., the available supply of trained sales people is rather limited. It therefore becomes necessary for the employer to secure his prospective sales people from other lines of trade, and train them to suit his own requirements.

It may be of some value if the person to be trained has had some experience in an allied line, or perhaps a department store; but this may even be a disadvantage at times as the training thus obtained may unfit the person to become self reliant and efficient. The training usually given to salespeople in department stores, and other large stores is of such a character as to fit them to be efficient in certain duties only, and then only under the constant and close supervision of a manager.

On the other hand, the retail electrical shop requires the sales person to be able to handle alone all the details involved in a sales transaction. A greater degree of self-confidence and dependability is thus needed.

The writer has found that good results can be obtained by the selection of persons from unallied lines of trade, as they seem to be more receptive and susceptable to special training. In one instance a most valuable and efficient sales person was evolved from a former proof reader.

A good high school education is essential—a knowledge of arithmetic to enable the handling of everyday transactions, involving the use of simple fractions and decimals—a knowledge of correct English, to properly explain and discuss the merits of the merchandise offered for sale, and the ability to write legibly in the making out of sales-tickets.

It is best not to attempt at first to go into the technical explanations, as to the why's and wherefore's, but to let the salespersons familiarize themselves with the appliances most commonly used; learning their various uses, characteristics, prices, etc., from actual handling of the merchandise.

It is well at the outset of the training period to explain the policy of the house, as to the attitude to take toward the customer. The customer must be favorably impressed and assured of fair dealing and the salesperson can do much toward this end by the manner of approaching and greeting the customer.

Civility and politeness are necessary but it is of equal importance for the salesperson to show a real interest in the wants of the customer. By so doing it is often possible to effect sales of appliances, the existance of which the customer had no knowledge.

A rudimentary training in the technical part of the business will be of value to the salesperson so as to teach her the why's and wherefore's and thus better enable her to demonstrate at the time of sales and also to investigate complaints, as to unsatisfactory performance of appliances. To understand why the device heats up, or why it does not heat, why the connecting plug should fit securely, why a fuse blows, why the applianace should be used in a prescribed manner, etc., etc., enables the salesperson to intelligently serve the customer and secure his good will.

It is well also that the salesperson be familiar with the proper manner of usage of the various appliances, for often the unsatisfactory performance of the appliance is due to lack of knowledge of proper use on the part of the customer, which might have been avoided, if the salesperson had observed care in explaining at the time the sale was made.

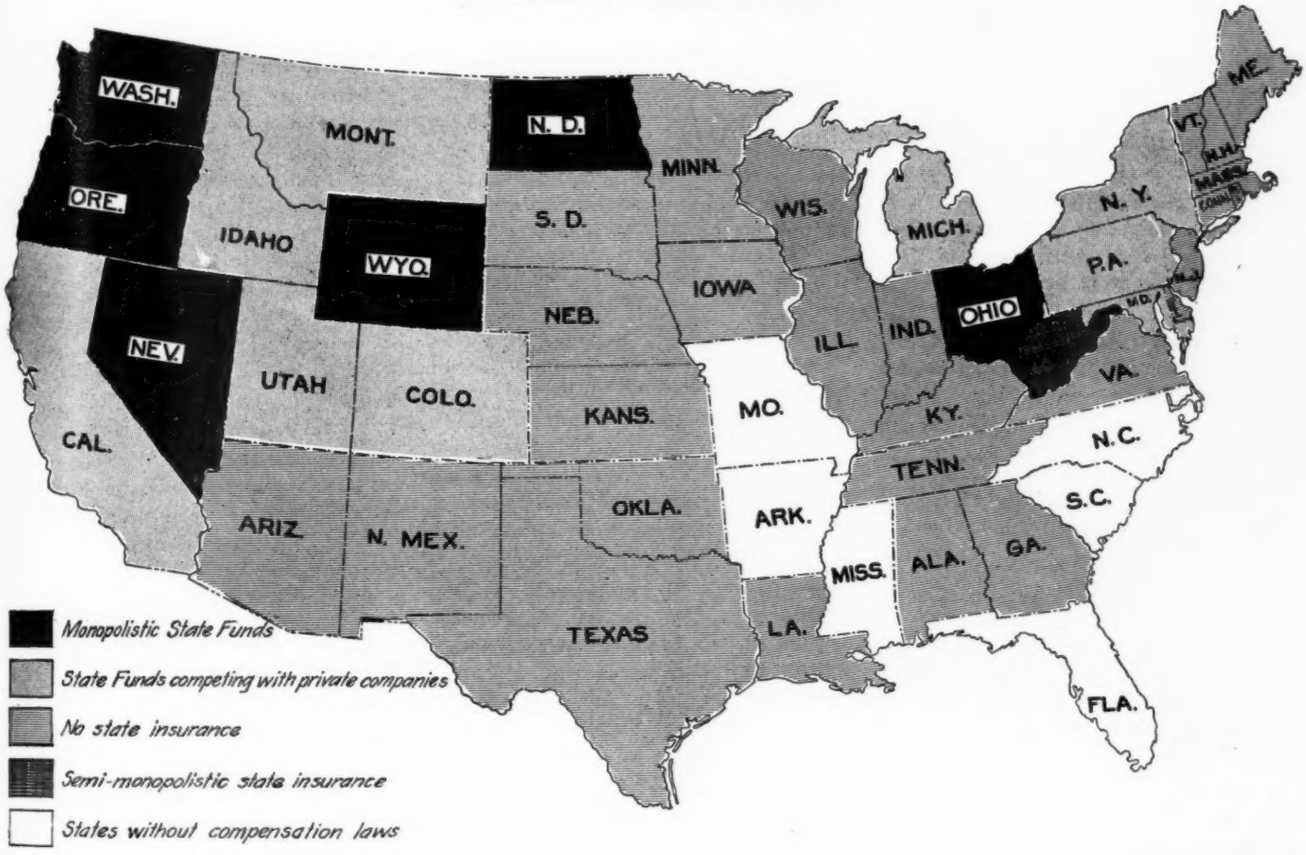
Sales can frequently be effected by showing new devices in actual operation. It is comparatively easy for an alert salesperson to interest a customer in a live demonstration.

(Continued on page 34)

Which Is Better—

Competitive or Monopolistic Compensation Insurance?

By H. H. STINSON
Associate Editor, THE ELECTRAGIST



IN all discussions on the subject of a state monopoly of workmen's compensation insurance, the electrical contractor is primarily interested, as an employer, in only two phases of the question. What are the comparative costs of the state monopolistic and of competitive systems and what is their comparative efficiency? Arguments as to the danger of monopolistic insurance leading to state socialism and, from the other side, that private or mutual companies exact too great profits concern the contractor more as a citizen than as an employer. If the adoption of the exclusive state fund system were to give him as good or better service at less cost he would be justified as a business man in supporting the exclusive state fund.

There are, at the present time, only six states in which a state insurance fund has a monopoly of the field. These are, as shown in the map above, Washington, Oregon, Nevada, Wyoming, North Dakota and Ohio. West Virginia has a semi-monopolistic system, employers being allowed under certain circumstances to carry their own insurance and then re-insure in private companies. In the first four of the states named above all employers subject to the act are compelled to insure with the state fund. In Ohio the state fund has a monopoly, no stock or mutual companies being allowed to do business of this kind in the state; however the employer may under certain circumstances carry his own insurance.

In the nine states of California, Idaho, Colorado, Maryland, Michigan, Montana, New York, Pennsylvania and Utah, there are insurance funds administered by the state but private and mutual companies are allowed to compete. Kentucky, Massachusetts and Texas have created a certain type of state mutual organizations which, however, compete with private institutions. Twenty-three other states, as indicated by the map, have workmen's compensation laws but no state-managed funds, while only Arkansas, District of Columbia, Florida, Mississippi, Missouri, North Carolina and South Carolina are without such laws at all.

The only place where an active fight for a monopolistic system of workmen's compensation is being carried on now is the District of Columbia. Indications are that the monopolistic system will not win the day there, at least not for some years.

The first advantage claimed by its proponents for monopolistic state insurance of workmen's compensation is

its cheapness as compared to either mutual or stock company insurance. Merely on the face of it, this claim would seem to have some weight. The monopolistic Ohio State fund operates according to its own figures at an expense ratio of only 1.8 percent as against an operating ratio of 16-19 percent for mutual companies and 34½ percent for stock companies. In other states where there is competition between state, private and mutual companies the state funds operate at a ratio of from 5 to 10 percent, still considerably lower than their competitors and thus the state insurance premiums are lower than those of the private and mutual companies. Despite this possible saving if the employer insures with the state, state funds in these commonwealths carry less than half and in a number of states as little as 4 and 5 percent of the total business. The fact that employers prefer the more costly mutual or private insurance indicates that state insurance must have disadvantages which outweigh any possible saving in cost.

Comparative Operating Ratios

The greater operating ratio of the mutual and the private companies is caused, it is explained, by: 1. Acquisition costs. 2. Cost of service. The stock company has an acquisition cost or commission to broker or agent of 17½ percent; but, according to its contention, the agent or broker performs services which make him worthy of his hire. He acts as the technical representative and adviser of the employer, seeing that the insurer is classified fairly and charged no more than the proper rate. He assists the employer to comply with the numerous and complicated legal requirements, he helps to adjust losses and usually collects the premiums for the carrier. He acts, in fact, as a middleman and the stock companies aver that he earns his commission, as in the majority of cases of middlemen, by reason of the convenience he represents to both parties.

In this connection, the Cincinnati Chamber of Commerce made a study of conditions in Ohio, which disclosed that many of those insured in the Ohio state fund have had recourse to "Service Companies" to look out for their classifications and ratings and in general act in the advisory capacity assumed by the insurance broker in other states, and that the extra cost of this service by a third party usually equals the saving represented by the lower rates of the state fund.

In addition to brokerage or acquisition costs, the private companies have a cost of 15 to 19 percent of their premiums which is traced to the expense of service rendered directly by the company. This includes: 1. A statistical service for rating premiums and controlling solvency. 2. An accident-prevention service. 3. A service for adjusting and controlling claims. 4. A service for providing and supervising medical care. 5. An agency service. 6. The service of capital put up by the stockholders to guarantee policy holders against loss. The first four of these services also are provided by mutual companies, the operating ratio running around 16 to 19 percent.

Safety Work

It is evident on the very surface that a state fund which expends from 2 to 7 or 8 percent of its total revenue on all services cannot render the service which mutual and private companies can at an expenditure of 15 to 19 percent, even though the state administration has the best intentions in the world. As a matter of fact it is claimed, both by the stock and mutual companies and by actuaries acknowledged to be impartial, that monopolistic state funds are seriously sacrificing not only justice but social well-being by the desire for economy. They carry on little or no accident prevention work, are unable to make proper inspections to improve hazards and by reason of this same lack of inspection make no proper differentiation of rates per hazard. This makes the careful employer pay as much as the careless and affords no inducement to follow good practice in safety work. Apologists for the Ohio monopolistic system assert that the state fund there differentiates in rates, doing this on past records of industries and individual employers. This, however, is a more or less haphazard method.

Inspection Statistics

The National Bureau of Casualty and Surety Underwriters submits some interesting figures on inspection and accident prevention work during 1923. There was a total of $4,475,149 expended for these purposes by stock companies and an insurance trade journal, "The Insurance Field," puts the number of safety recommendations by stock casualty companies at 1,500,000. The mutual companies were equally active, it is to be supposed.

In contrast with this the Cincinnati Chamber of Commerce and other authorities report that in Nevada accident prevention work is conducted only through educational means and the promulgation of a safety code, in North Dakota there is no safety department in operation, in Oregon since 1921 a 5 percent reduction in rates is allowed to establishments with safety committees, in Ohio the state fund has provided no machinery for the control of accidents, in Washington no inspectors have been employed to pass upon the condition of plants nor field agents to investigate the causes of accidents, in West Virginia no attempt is made to do accident prevention work and in Wyoming there is no accident prevention work.

If a monopolistic state fund were to undertake inspection of risks, payment of taxes, effective auditing and equitable determination of rates, it would bring its expense very close to the operating ratio of the mutual companies and to the service costs of the stock companies. It would probably cost the state fund more to get the same results for there are few known instances of bureaucratic administration operating as economically as private enterprise.

Claim Settlement

One of the strongest talking points used by the mutuals and stock companies against state-managed insurance funds has been inefficiency and delay in settling claims. A great mass of data was gathered from an investigation of the New York competitive fund and the Ohio monopolistic fund, though the latter had been held up as a model of state-managed insurance, but owing to lack of space only a small amount of it can be brought forward here.

At the beginning of 1923 tests were made by the New York State Industrial Commission to determine how soon compensation was paid in cases where payments were made directly by the insurance company or the employer. The average time between the date of accident and the date of first payment for the mutuals was 26.3 days, for the State insurance fund 33.5 days, for self-insurers 27.5 days and for stock companies 28 days. Opponents of state insurance claim that there are many cases where payment is held up much longer than the above figures would indicate, the delay ranging anywhere from six months to five years, the latter being in the celebrated "Sam Hoy case," in New York.

(Continued on page 34)

Shall We License { Contractors? Journeymen?

By S. B. WILLIAMS
Editor, The Electragist

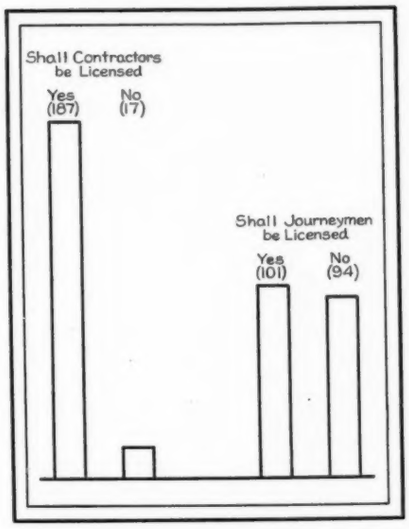
IF there was every where a desire to to carry out the law in spirit as well as letter, if there were no unscrupulous politicians and fewer scheming union leaders the electrical contractors would probably stand, except for the few irreconcilables, 100 percent in favor of licensing master electricians or contractors. As it is 187 out of the 204 voting favor a master electrician's license.

As indicative, however, as these figures are there is much to be said on both sides.

While but two questions were asked of the A. E. I. membership—

1. Shall master electricians (contractors) be licensed?
2. Shall journeymen be licensed?

A great many stated that they were in favor of licensing the master electrician provided a real examination was first required and provided also that the licensee established his responsibility with a bond of substantial size.



The reason for licensing contractors is the same as for licensing those engaged in any other profession—protection of the public against incompetency. Wheresoever the practice of a profession involves a moral, health or fire hazard the State, or a political subdivision thereof, may require that those wishing to practice that profession prove their competency by training or examination or both before being permitted to engage in that profession.

The installation of wires for electric service involves both a health and fire hazard. Through improper installation one might suffer severe physical injuries or even lose his life; or the building so wired might, because of it, catch fire.

Those opposed to licensing will admit this but say: "Licensing is ineffectual. It doesn't reduce life and fire hazards. It doesn't reduce the number of incompetents. If anything it confuses the situation more because anyone can and does get a license and the public is deceived."

Such, unfortunately, has been the case in more than one city. In some cities the value of a license has been destroyed through the use of special permits to do individual jobs.

The larger the city, of course the more difficult it is going to be to make

Arguments For and Against Licensing Master Electricians

—*For*—

To eliminate the curbstoner and the unqualified
To make the contractor more responsible
To protect the public
To insure safer and better work
To protect the contractor and reducing unfair competition insure him a greater chance for a fair return
To stabalize the industry and produce better contractors
To establish the industry and create in the public a greater feeling of security
To help the jobber in granting credit
To enable inspection departments to check upon work
To prevent journeymen from going in business on the side and stealing the employer's material for their jobs
To attract to the industry a more intelligent class of men
To help keep men from jumping in and out of the business
To be able definitely to place responsibility
To make it possible to locate contractor if poor work is done
To help bonding companies to bond only responsible contractors
To eliminate jobber competition with contractors
To insure more competent supervision
To build pride in work

—*Against*—

There has been no improvement where tried, citing New York, Akron, Baltimore
It has failed where tried because of politicians and the union
It is seldom enforced
It is apt to lead to unfair treatment
It is a nuisance and nothing is gained thereby
It has no value because anyone can get a license
There is too much legislation as it is
It is no good unless backed by a strong local organization
It levels all contractors and makes competition one of price only
Inspection should provide sufficient safety
So many contractors are business men only that licensing should apply to installation forces only
Do not believe in giving a fictitious standing to a concern by licensing
Because public would look upon it at this time as restrictive

an ordinance that is going to be air tight. The practice of falsifying the contractor's name on a job permit, the practice of forming fictitious partnerships solely for the purpose of securing a license to cover the work of a number of individuals, and other practices, are not always easy of detection and proof in the larger cities. In the smaller cities, however, where everybody knows everybody else there are slim chances of so evading the law.

If licensing is right it is always possible to make it work and work well. All that is necessary is a strong contractor's organization and relentless publicity. Licensing is for the protection of the public and if the public is not receiving the protection it believes it is having, let it know—but first be sure of your facts.

Another argument sometimes heard against licensing is that it levels contractors to a common plane and removes quality and ability from competition, leaving only price. A complete answer may be had from one's everyday experience. Does the licensing of doctors reduce all to the same plane? Do we look around for the cheapest doctor? Is it not true that the most expensive doctors are the ones that it is hardest to get an appointment with?

No! Licensing does not level contractors. It merely says that everybody is at least so good and then it is up to the individual to prove by his work how much better he is than passing.

Some contractors in this connection, advocate that licenses be divided into classes so that the contractors will be graded. It is doubtful if an ordinance with such a provision would be upheld by our courts. The city is empowered merely with the right to demand that anyone engaging in a practice that involves a public hazard must be competent to engage in that practice. Degree of competency may not be judged by any municipal, state or federal body.

One other reason given for not licensing contractors that deserves consideration is that inspection should provide sufficient safety. Inspection is a public necessity but it involves no responsibility. Contractors cannot "pass the buck."

Even if the inspection service were 100 percent perfect the public would still suffer from the incompetent because he would have difficulty in getting a certificate of approval and in the mean time the customer would have to suffer the delay. Without a license such incompetents are permitted to continue in the business.

Besides in a great many places there is no regular inspection. Then what?

In addition to the protection of the public there are other reasons which were given in the answers to this question of licensing contractors which should have great weight with the public and with the electrical industry.

The most popular answer was that licensing would greatly diminish the activities of the curbstoner, of school boys, fly-by-nights, industrial electricians out of a job or who wanted to do jobs in their spare time, journeymen who although working regularly for a contractor took jobs on the side frequently stealing the materials from his employer. If licensing will diminish the nefarious activities of this class of

Arguments For and Against Licensing Journeymen

—*For*—

To eliminate the inexperienced such as helpers, floating labor, Jacks-of-all-trades, etc.
To protect the contractor by insuring ability
To insure better workmanship
To insure a better class of wiremen
To make him more responsible
To protect the public
To keep those capable of doing only one class of work from working on other jobs and getting the wages of an all-around wireman
To prevent unscrupulous contractors from doing work with unskilled men
To give the men a better standing in the trade
To prevent labor from coming into the city and flooding the market
To make the journeyman study and through study become better equipped to do a good job
To insure a man's learning his trade and to be an incentive to apprentices and helpers
To build a better morale
Because of it there is better and safer work in Wilkes-Barre
Because of it men show more interest in their work in Toronto
Because of it conditions are better in Calgary
Because it is not always possible for the foreman or contractor to be on the job and therefore the duty falls on the wireman to see that the job is done right

—*Against*—

Journeymen are not and cannot be responsible to the public
Would place control of labor situation entirely in the hands of the union with possibility of its controlling the examining board.
Would tie up the city in case of labor trouble
(Declared unconstitutional in San Antonio because it deprived men of right to earn livelihood during strike).
No reason why men should be placed under political control
Would restrict number and supply of men and retard development
Would prevent issuance of temporary cards in boom times
Would make it hard for men who go from state to state to get licenses
No need seen for it
Unnecessary, if contractors are licensed
Would not increase personal efficiency or make better workmen
Would create more competition by making it possible for journeymen to do work on the side at cut rates
Would deceive public
Would give contractors and journeymen a chance to "pass the buck"
Because capable men will get work anyway and incapable men should not be licensed
Examination would be against men who specialize in only one class of work
Because the employer is more competent as a rule to judge fitness than a board of examiners
It could not be controlled and anybody could get a license
City inspection should be sufficient protection
Too much legislation now

men, all of those engaged in contracting who have a spark of pride in their work should welcome it.

And the facts seem to prove that licensing is effective in this connection. In not a few places where licensing has been employed the number of incompetents and irresponsibles has been kept down while in Nashville where a license ordinance was repealed the number of curbstoners grew almost over night.

A license with a bond certainly establishes responsibility and it also makes the average contractor more careful. If he loses his license he loses the right to engage in the profession of his choosing.

With a license the jobber has no alibi when he sells to the curbstoner. He can now claim that he cannot tell who is a curbstoner. Such a defense, however, will have no standing when all contractors must be licensed.

Creates Public Security

Licensing, it is also pointed out, creates a sense of public security, it establishes the industry in the public mind, it raises the level of the industry and attracts to it a higher type of man. That is reasonable for, if one is to believe some of the letters he gets from various cities, competition is such, now, with curbstoning rampant, that there is little in the business of electrical contracting to attract people with brains.

There are other reasons in favor of licensing, most of which are pertinent. They, together with the reasons against licensing, will be found in this article in parallel columns that one might have the arguments at a glance.

Licensing of Journeymen

Division of opinion on the question of licensing journeymen is more equally divided. On this question 195 answers were returned showing that there were some who declined to make a decision. One hundred and one, or 52 percent, voted Yes and 94, or 48 percent, voted No.

In the voting one is able to distinguish two things:

The fear of the union and
The desire for better workmen.

Those in favor of licensing the journeymen point out that the public interest will thus best be served; because it will make the men take a greater responsibility, it will insure better workmanship. The fear of losing his license and with it the right to earn a living at his trade, fear of being publicly branded amongst his fellow workmen as a failure, will cause a journeyman to be less careless and to be more thoughtful. It will eliminate the jack-of-all-trades, the fly-by-night, the wanderer, the incompetent. It will protect the contractor by insuring the ability of the men he hires.

These contentions are all the stronger by being backed up with evidences of practicability from such places as Wilkes-Barre, Peoria, and certain Canadian cities such as Calgary and Toronto. Massachusetts requires that journeymen be licensed but there seems to be a difference of opinion as to how well it is working in that State.

Certain it is that these poor conditions amongst journeymen exists even where there is the best kind of superintendance, owing to union regulations. One may find a man loafing or making a botch of his work and discharge him at the end of the day but if labor is scarce and one needs men the Union is less careful about supplying the needs of that contractor.

Such a condition of course would not be entirely corrected by licensing but if the license were not a farce the contractor could at least feel reasonably sure of the mechanical ability of his men.

Gives Union Too Much Power

On the opposite side are some who have had bitter experiences and others who do not care to suffer likewise. They are emphatic in voting against a journeyman's license on the grounds that it places all labor, union and non-union, within the control of the union. With its political power, these men claim, there is the possibility of the union controlling the examining board. In that event whatever benefits were claimed for licensing journeymen would be lost and it would be extremely difficult for a non-union man to get fair consideration. Furthermore, in the event of labor trouble or a strike the city would be tied up and labor would be in a position to enforce its demands.

In San Antonio, Tex., the courts held the license be unconstitutional because it deprived a man of his right to earn a livelihood during the strike.

Another reason against licensing given by many contractors was that journeymen are not financially responsible nor can they by any amount of legislation be made responsible to the customer. These men hold that the contractor alone is responsible and that he cannot delegate that responsibility or be in any way relieved thereof.

There were some who were of the opinion that the granting of a license to journeymen would create more competition for contractors by putting licensed workmen in the position to deceive the public and do odd jobs on the side at cut rates.

Such activities will probably occur under any condition. The jobs are small and require no permit and therefore there will be no inspection and no checkup. From the outside it would appear as though it were better, if such work were undertaken, to have it done by a licensed man who had by examination proven his ability than by one with no certified qualifications.

Other reasons were given but they do not seem to require discussion. Elsewhere in the article the reasons given for and against are also marshalled in parallel columns.

The subject of licensing is an important one and of course can not here be decided. England and other countries have experienced similar difficulties and they are trying to find their way out through national registration of contractors.

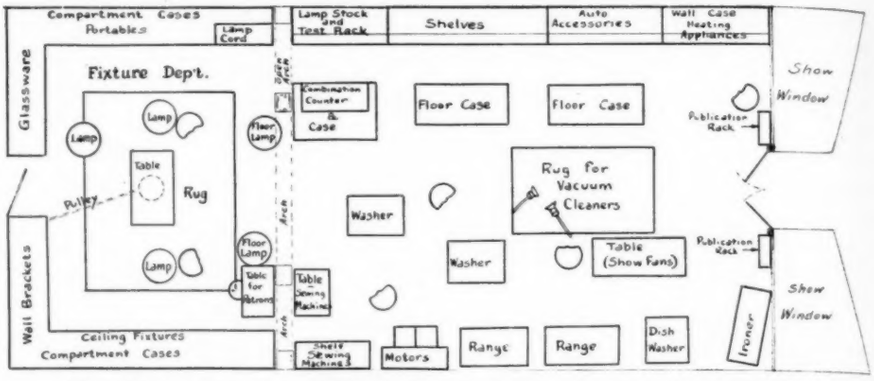
It is doubtful if national licensing could ever be accomplished in this country not alone because of its size but because licensing is a function of the State. The State may if it sees fit delegate the power to the city, town or county.

There are some who favor State licensing as against local licensing. This was a condition, however, to which no attention was given in this investigation. Engineers are ordinarily licensed by the State as are doctors and lawyers. Electric service, however, has been considered more of a local and less of a State service and for that reason has been governed in its installation almost entirely by municipal bodies.

What Co-operation Means

"Cooperation means so to conduct yourself that others can work with you. Let us apply this in our daily contact. Let the contractor who submits a wiring contract to a prospective customer of the Central Station have a good word for the light company and when the light company is the spokesman let the remarks be in fairness and justice."—T. Hall Truman, Jr., before the Pennsylvania State Association of Electrical Contractors and Dealers.

A Good Arrangement for the Long, Narrow Store



The Medium Store Layout Which Affords the Best Opportunities for Displays

Why a Narrow Store Isn't Arranged the Same As A Wide One

By W. A. BOWE
Commercial Service Section, General Electric Company

IF we could take the typical electrical stores and stand them on end, we would observe a similarity to the various shapes of human beings. There are long stores, there are broad stores and there are those of medium dimensions. Each presents its own peculiar problems. But if we are to consider the space from the standpoint of sales value, these problems must be completely and satisfactorily solved. The solution is most effectively arrived at by considering the experience of electrical dealers in all parts of the country and under varying conditions.

The long store usually has a single window. Where this is true, the wall and floor cases should be along that side of the store back of the window. This will permit the use of the floor displays along the opposite side. The fixture display should then be built in the rear, either across the store or along one wall. The office, too, should be located in the extreme rear. If however, there is a scarcity of floor space, but a sufficiently high ceiling, a balcony large enough for the office should be considered.

While an aisle of 6 ft. is most desirable, every effort should be made to provide at least 4 ft. This is scarcely sufficient for two customers to pass through at the same time. The long store is usually very narrow. For this reason, it presents a rather cramped appearance and makes the ceiling look higher than it really is. This distortion may be partly overcome by avoiding any wall decorations that run up and down. A border a short space below the ceiling will also help to overcome this.

Inasmuch as the rental of the average retail store is influenced by the frontage, the narrow store is usually inexpensive. However, the interior can be given additional value if space is secured in the back of one of the adjacent stores. The walls can then be broken through and the additional space gained without paying for any increased frontage.

In considering the broad type of store, we have in mind that space where the frontage is almost equal to the depth. Under this condition, there are usually two display windows. If possible, the shelving and cases should be along the right side, if the store features the products which lend themselves best to display in those fixtures. However, if more emphasis is placed upon the power appliances, which require floor space for display, then the right side of the store should be devoted to these appliances. The reason for this is obvious from the direction which people take in going through a retail store. Their glances are usually to the right, and therefore, the displays to the right of the entrance should be those to which the most importance is attached.

If however, with this type of store, there is a single window, the same arrangement of cases should be made as with the long type. The office should be in the extreme rear, either across the back, or in the corner back of the cases. Because it is desirable sometimes to have the fixture display across the entire rear of the store, it is then recommended that the office be placed back of the fixture display. Otherwise, the fixture display should be in the corner opposite the office.

In the case of an extremely shallow store, the window background should not be higher than 4 ft. above the sidewalk level. This makes the entire store a display window and at the same time provides an unobstructed view.

The medium type of store is that which is most commonly selected by electrical retailers. Here, we find a front depth from two to three times as great. This type offers the best display advantages. Wall and floor cases are permitted with ample aisles and floor displays across the store.

The location of the office and fixture sideplays is similar to that recommended for the broad type.

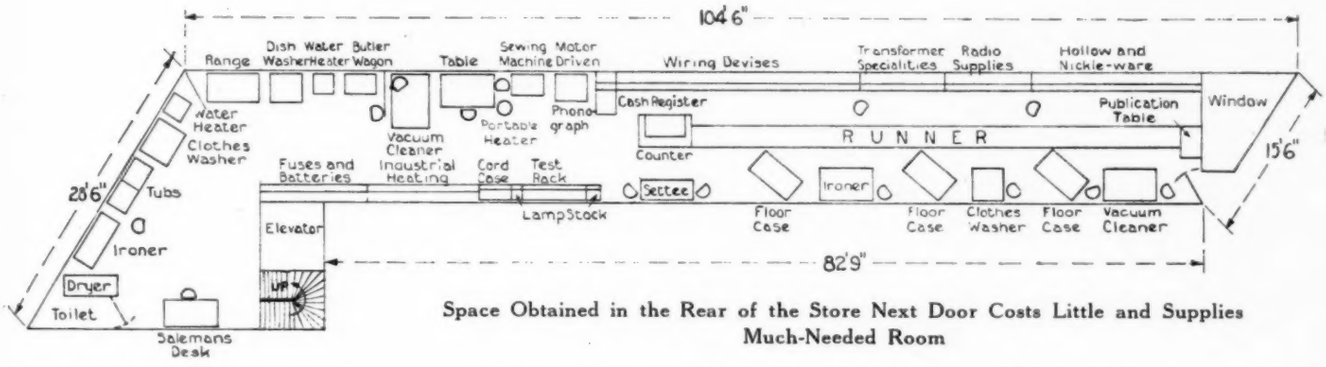
Since radio sets have become such an important part of the electrical retailer's stock, it has been found desirable to construct a booth in which to demonstrate these receiving sets. This booth should be in the rear of the store where its construction will not break

up what might be an otherwise regular appearance.

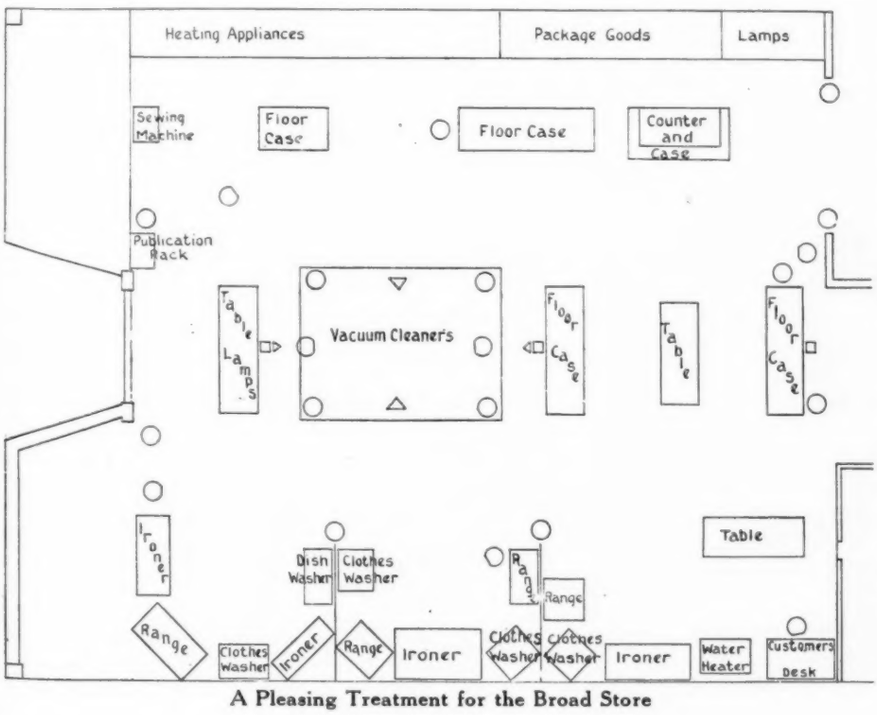
Because of the increased space which is being given to the display of lighting fixtures, special consideration must be given to these products. Where it is desirable to construct booths or special display cases, the exact location should be determined only after careful study of where the fixtures will show to best advantage.

By all means, the lamps should be kept in the rear of the store. They represent the products which are most often called for by the customers of the electrical dealer. Thus when the customer is going to the rear of the store, there is the opportunity for attractive displays to catch the eye and hope to make some sales impression. There should, however, always be small displays of lamps in a case, or on a table in the front of the store, so as to act as a reminder.

Display Difficulties of the Narrow Store Can be Overcome



Space Obtained in the Rear of the Store Next Door Costs Little and Supplies Much-Needed Room



A Pleasing Treatment for the Broad Store

There is a decided and commendable tendency to arrange even the small electrical store into departments. This does not involve any elaborate system of segregation but on the other hand, really involves an arrangement of better displays placed according to their relation to each other. For instance, in that section of the store given over to the display of radio products, should be included not only sets and parts, but also batteries and battery chargers. In this way the customer can be completely served without having to be taken to various parts of the store. In addition, the complete grouping suggests the use of the various products in their relation to each other.

The use of neat and appropriate signs conspicuously placed will greatly facilitate this effort for more effective arrangement.

The successful experience of department stores in moving their goods

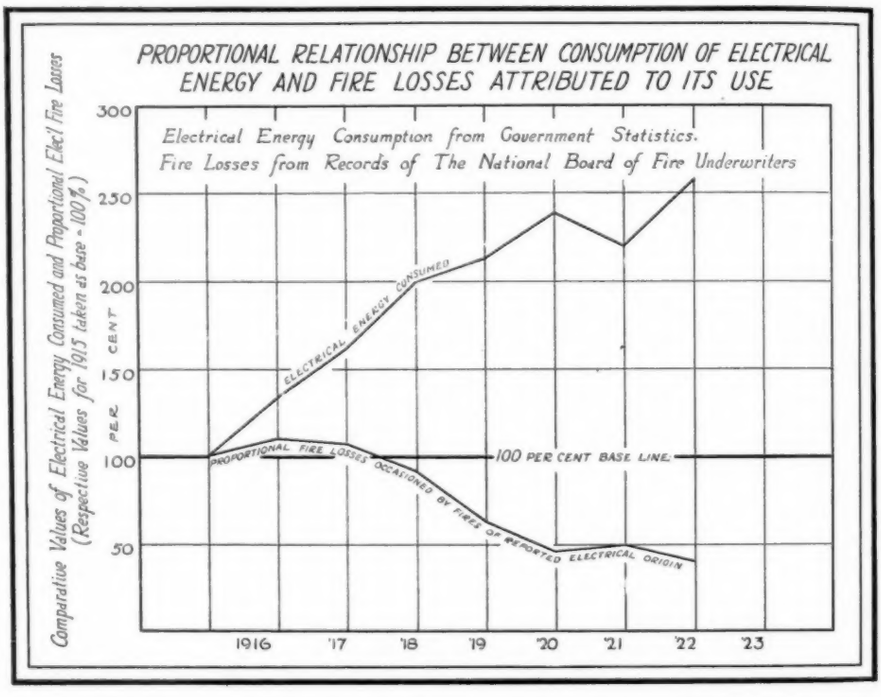
(Continued on page 34)

A Suggestion For Contractors During Fire Prevention Week

By ROY A. PALMER
National Lamp Works of the General Electric Co., Cleveland, Ohio

WITH the approach of Fire Prevention Week, October 5 to 11, the tremendous losses by fire are brought to our attention and we are reminded that we should faithfully play our part in helping to reduce these losses. To members of the electrical industry, activity in the prevention of fire is a most important duty. In almost every phase of modern day life electricity has become such a requisite as to be indispensable and while it is held responsible for a considerable share of fire losses, it should also be remembered that it perhaps is a greater fire preventative than a fire hazard.

Undoubtedly there have been many instances where electricity has been unjustly blamed as the cause of fire. While such accusations are unfortunate and may have been somewhat detrimental to the increase in the use of electrical service years ago, they have little or no effect upon the attitude of the public today. We need only to picture the predecessors of the incandescent lamp—open gas flames, kerosene lamps and candles to appreciate how the greater use of electric service is a fire preventative rather than a fire hazard. A comparison of the consumption of electrical energy and the fire losses attributable to the use of electricity serves to bear out this fact. Such a comparison is shown graphically on this page. The use of electrical energy has increased very considerably while the losses from fires of electrical origin have decreased.



Electrical energy is most commonly used for illumination. For this purpose it has practically eliminated the extreme hazards which accompanied the use of flame illuminants. To further prevent fire there remains another channel in which the contractor can become active. And that is in the proper use of light in stairways, corridors, store-rooms and other similar places where the lighting is far below standard. These places as a rule are the poorest lighted of the entire building and the result is dark, dingy places, where dirt, waste paper, packing material and other combustible material are allowed to collect. It is an accepted fact that well lighted rooms and passageways are usually kept in a neater and more sanitary condition than when the lighting is inadequate.

Notwithstanding the fact that the standards of lighting have been increased very considerably since the value of light as a means of increasing production, decreasing accidents and improving working conditions has become more generally appreciated, there are a very large number of industrial plants wherein the lighting is not up to present day standards. Stairways, passageways and similar places of such plants are usually even further below standard than other parts of the plant. The corridors of many office buildings where hundreds of people pass through during the day are woefully inadequate from the standpoint of proper illumination. This is especially true of older buildings where not only the fire hazard is increased by inadequate light but the accident hazard is likewise increased. School buildings of which there are several in every fair sized city which are not of the most recent construction, contain corridors and stairways where the lighting has been allowed to depreciate to a point where it is dangerous.

In every city there are public, industrial and commercial buildings where poorly lighted stairways, corridors and storage spaces constitute an excellent market for new lighting equipment. In many of these buildings, the location of the units may be entirely correct but because of broken glassware, improper reflectors, or wrong size lamps, the illumination is below standard. Glare from such exposed lamps is blinding and may be the cause of an accident. Furthermore, undiffused light sources cause

dark shadows to be cast by objects in passageways which may hide oily waste or other inflammable refuse that may cause fire. Merely revamping the lighting equipment will constitute a good source of profit to the contractor who is observing as to the needs of each particular building.

Because some passageways are not used as frequently as other parts of the building, the building owner does not feel that it is necessary to supply much light. The cost of installation and operation is always uppermost in the owner's mind with the result that a minimum of outlets and wattage are installed. If he could only be made to realize that the cost of operation of well lighted stairways and corridors is surprisingly small in comparison to the cost of a single accident or fire, he would not hesitate.

Wall brackets are not desirable in stairways. The light source is then too low and will constantly be in the line of vision. Then, too, diffusing glassware is either never used or never replaced when first broken and the exposed lamp becomes a source of glare that is blinding even though the lamp is of small size. Bare lamps should not be tolerated in any location.

How to Improve the Illumination

When the illumination is to be improved, the first problem is that of location of the units. Because of the characteristics of each individual place, the placing of the units will naturally depend upon the judgment of the contractor. In stairways, there should be one overhead unit at each landing. Too often units are only placed at every other landing which does not provide sufficient light and gives opportunity for the existence of undesirable shadows. The units should be suspended from the ceiling and equipped with a good reflector or diffusing glassware.

Your Market

THE greatest offenders in the matter of improper lighting of stairways and corridors are the owners of the following types of buildings and they represent an excellent prospect list for both lighting and wiring:

1. **Factories**
2. **Office Buildings**
3. **Loft Buildings**
4. **Court Houses**
5. **City Halls**
6. **Schools**
7. **Apartment Houses**
8. **Hospitals**
9. **Libraries**
10. **Hotels**
11. **Dormitories**
12. **Department Stores**
13. **Printing Plants**
14. **Warehouses**

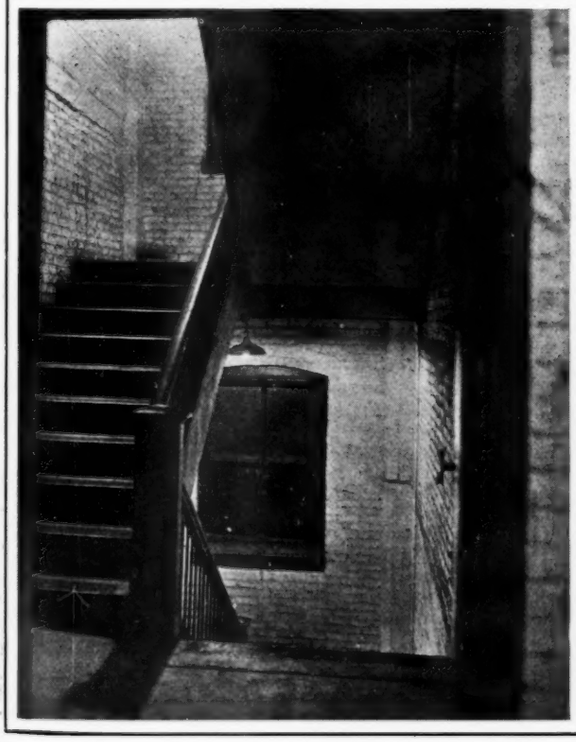
The type of reflector will, to a large extent, depend upon the surroundings. In a factory where the work is rough and appearance is not important, the standard RLM dome reflector equipped with a 100 or 150-watt bowl-enameled lamp will very satisfactorily serve the purpose. In factories where the work is less rough or dusty in character, the units may be of enclosing glassware. Lamps of the 100 or 150-watt size should be used.

In hallways and corridors units should not be mounted too far apart so that there will not be sufficient illumination between them. They should be mounted well above the line of vision and shaded with diffusing glassware.

In many buildings the liberal use of white paint will aid very materially in improving the illumination.

The circuits in halls and stairways should be wired and fused independent of the other circuits in the building. If the circuits in the parts of the building other than stairways and halls should fail through some cause arising in that particular area, the lamps in the stairways, halls, and exits will not be affected.

It is important that a regular maintenance schedule be maintained on the lighting system in the corridors and stairways as well as in other parts of the factory in order to insure clean lighting units and replacement of burned out lamps.



Some Examples of Good Lighting

Left—Note the light on the treads of this factory stairway and the absence of dark corners.

Below—There are no dark corners or bad shadows in this corridor yet there is not a large number of lighting units

C. B. Kenney, San Francisco

Whenever local and national association work on the Pacific Coast is the subject, the name of C. B. Kenney is one of those which come up naturally in the discussion, for, since 1907, when he made the long trek from his New York home to Seattle, he has been one of the hardest and most consistent workers in that territory for organization and cooperation in the industry. He was born in Jefferson County, New York, in 1881. This was not far from Syracuse where he did his first electrical work as an apprentice in the shop of David Cronin. There, from 1898 to 1903, he laid the foundation of a knowledge of electrical contracting that has made him later a member of one of the largest electrical contracting firms west of the Rockies. In 1903 he stepped up to the position of superintendent for the Edward Joy Company of Syracuse and held that place until his departure for Seattle in 1907. In Seattle he went with the Aggutter Griswold Company. This firm ceased construction work in 1910 and as construction work was his field he welcomed the opportunity to strike out for himself as one of the partners in the newly formed firm of NePage, McKenny Company. He took charge of the estimating in Seattle for several years and then opened the company's office in San Francisco in 1914, taking charge, as vice president and general manager, of the company's California business. The company operates in Washington, Oregon and California and covers all classes of electrical construction and engineering work. Mr. Kenney is a member of the San Francisco Electrical Contractors and Dealers Association, of the San Francisco Electrical Development League and of various other civic bodies.

Electragists You Should Know

Alex. M. Cover, Pittsburgh

Though Alex. M. Cover, guiding spirit of the Pittsburgh office of the Iron City Engineering Company, is still well on the sunny side of the half-century mark, this year will see the thirtieth anniversary of his entrance into the electrical industry. He was born in Johnstown, Pa., in 1878 and just sixteen years later took his first real job, with the Johnstown Light, Heat and Power Company. During the following five years he went through all the operating departments of the company, boiler room, engine room, line work, house wiring and general repair work. At that time wiring was done by the "put it in and hope it will work" system. Engineering features were almost unknown and the central station wiring, Mr. Cover recalls, for a 2,300-v. alternator resembled what is now used for a farm lighting plant. Good engineering practice developed rapidly, however, and in 1899 when he went on the payroll of the Johnstown Telephone Company Mr. Cover was well versed in all its angles. Three years later he returned to the central station industry as superintendent of the South Fork Light, Heat and Power Company. During this period he encountered and solved one of the central station field's first public relations problems, that of changing from a flat rate charge to a metered charge. In 1907 he became affiliated with the Iron City Engineering Company as foreman and has risen to be manager of the Pittsburgh office of the company, which is one of the oldest electrical contracting firms in that territory. He is now serving his second term as president of the Pittsburgh Electrical Contractors' Association.

Armored Cable Wiring Labor Costs and Installation Methods

A preliminary report brought out at this time with the thought that it might stimulate others to send in such additional data, records and suggestions as they might have or can gather

By ARTHUR L. ABBOTT
Technical Director, Association of Electragists—International

AN investigation of labor costs on armored cable installations was undertaken on June 1, 1924. Twelve cities have been visited and data has been secured from 35 contractors in these cities. A number of actual jobs have been visited while in progress and observations made of the work of skilled mechanics. While the work at the present time is far from complete, it seems advisable to make available for the use of our members such data as has been collected, because practically no estimating data applying to this class of wiring has ever been published.

It has been repeatedly pointed out that in order to be of real value, labor cost data must refer to clearly understood and definite classes of work, carried on under definite conditions. For this reason, also because this class of work is not well known in some localities, considerable space is devoted to a discussion of the materials, their installation, and methods of handling the work.

Materials and Installation Methods

OUTLET BOXES—Cast iron boxes are commonly used at ceiling outlets. These boxes are 3¼ in. in diameter and have a fixture stud and four cable openings which are provided with clamping devices. The openings are so formed that no bushing is required on the end of the cable. Four holes through the back of the box and one through the fixture stud are provided for fastening screws. There are also pressed steel boxes which are very similar to those of cast iron.

Any regular conduit box with ½ in. knockouts, such as the No. 54151-4 in. round or octagon, may be used with armored cable by applying cable connectors to the cable ends. This adds considerably to the cost of material. Additional labor is also required, amounting to about .07 hour per outlet. The larger and deeper box makes a better job.

At switch and receptacle outlets, the sectional steel box with knockouts for cable and cable clamps is very generally used. The cable ends must in this case be fitted with bushings. A few contractors prefer to use the standard 4 in. square conduit box with cover because of the extra space such a box provides for splices, also because they claim the clamps in the sectional boxes do not hold the cable securely.

INSTALLATION OF BOXES—Ceiling and bracket outlet boxes may be installed on wood headers or on factory made steel hangers of which there are a number of varieties on the market, or when a ceiling joist occurs at the right point, a shallow box may be secured direct to the joist. The wood headers are usually toe-nailed to the joist or stud. They are preferably made of 2 by 3-in. or 2 by 4-in. pieces, and the box is screwed on in an off center position so that if only two cables are to enter the box they will pass beside the header. Holes must be bored through the header for additional cables. The necessary holes should be bored and the box screwed to the headers before the header is nailed in place. The steel hangers will save time and show some economy, provided the wiremen do not have a preconceived idea that a certain fixed number of outlets installed constitutes a day's work.

There are several methods of installing switch boxes on wood strips and lath. The lath support is very popular and seems to make a substantial job.

Steel switch box supports make a much more rigid job, and have the great advantage that they can be fitted with lath holders to support the ends of the lath which butt against the sides of the box. These supports and lath holders should be used on the better class of work, but little or no saving in labor is effected by their use.

Receptacle boxes for appliance outlets may be supported in the same manner as switch boxes if installed in a vertical position. When installed in the base-board they must be in a horizontal position. There is at least one manufacturer who makes steel supports for this purpose and the use of these supports will be found more economical than any other method of installation which has been observed.

CABLE INSTALLATION—Beginning at one outlet, the cable is threaded through the holes which have already been bored to the next outlet, about 8-in. of the armor is stripped from the end and the end is attached to the box. The slack is then pulled back, and the cable is cut, stripped and attached to the first box. Every time the cable is to be cut off the wireman makes three nicks in the armor about 8 inches apart holding his saw at an angle of 30 to 35 degrees with the cable. The armor is then broken at the center nick and pulled back so as to leave about 1 inch of the cable insulation exposed, and the conductor and insulation are cut off with the saw. Each end either side of the cut is now ready to be stripped by merely breaking the armor and pulling off the loose end. The workmen in making the nicks for stripping must take great care not to cut through the armor and into the insulation. Each nick can be made with seven or eight strokes of the saw and only one stroke is required to cut the conductor and insulation. Some of the best workmen prefer to reverse the saw blade in the frame so that it cuts on the "pull" stroke instead of the "push" stroke.

In attaching the cable to the cast iron ceiling boxes previously described care should be taken to pull the cable up tight against the inwardly projecting boss on the hole in the box, otherwise the full protection value of the rounded opening is not secured. As a safety precaution, some contractors require their men to fasten the cable to a joist or stud within six or eight inches of

the box, which prevents any possibility of the cable pulling away from the box. This is a very good method to follow, but the wiremen should be warned to push the cable up towards the box when making their fastening so that the cable is crowded against the box instead of being pulled away from it by the fastening.

The cable may be fastened up wherever necessary by means of a small pipe strap secured with two nails, or by means of a staple made especially for this purpose. It might seem that there is some danger of injury to the cable by driving the staple in too strenuously, but no such trouble is experienced in practice. The staple requires much less time than the pipe strap. The cable requires little or no supporting except at outlets as mentioned above and except in the case of long vertical runs.

Handling the Job

It is important that the contractor do his part of the work thoroughly if he wants his men to reach a high rate of production; neglect by the contractor of his duties will not only cause actual delay on the job, but will also result in a mental attitude on the part of the workmen which shows up their work.

LAYOUT—The wiremen should be furnished with a layout of every armored cable job in a new building. This is not a common practice, but it will always pay. For a simple job such as an ordinary residence, a layout made with colored pencil on the blueprint is amply sufficient. A drawing made in pencil on tracing paper may be used for an apartment building or other such job. Blue prints can be made very successfully from such a drawing; several copies will be needed if there is to be more than one crew at work at one time. The layout should show cabinets, outlets and cable runs. Wall outlets should be shown as nearly as possible in their exact location. The swing of all doors should be carefully determined so that switches can be located correctly. If an exact location of any outlet is important, it is well to give a dimension in feet and inches from some fixed point, for example, when two brackets are to be installed on one wall of a room, show the exact distance between them.

TOOLS AND MATERIALS—Have more than enough material of every kind for a day's work on the job when the men start work, and never let them run short of any item, even the smallest. The men will need pliers, screw-drivers, hacksaw frames, push drills, claw hammers, one heavy rachet brace and extension per crew, one boring machine and two stepladders per crew, 3/4-in. bits and flexible back hacksaws 23 teeth per inch.

SUPERVISION—The contractor or his superintendent should visit the job every day, make certain that the supply of material is ample, and see that the men are provided with proper tools and that the tools are in good order. If the crew is new at the work, he should instruct them in the proper methods of work and use of tools.

METHODS OF WORK—Getting a lot of work done in a day does not necessarily call for tremendous exertion by the wiremen; the use of proper working methods will insure a high rate of production without making unreasonable demands on the men.

There are four steps in doing the work:

1—Distribute the outlet boxes, and hangers and supports, if these are used.

2—Install the boxes.

3—Bore holes.

4—Install the cable.

Two men will commonly work together as a crew. A should start to locate the first ceiling box while B distributes boxes and hangers. A continues with ceiling boxes and B installs all the wall boxes. The first man through with his outlets starts boring holes through ceiling joists with the boring machine. When the other man has completed his outlets, he begins boring holes through studs, plates, floors, etc., with the brace and extension. Each man when through boring holes begins to install cable, each working independently of the other.

Cost Records

HOUSE WIRING—On the smaller class of house wiring jobs both new and old, labor hours and costs should be separated into four divisions:

1—Branch circuit roughing in per outlet.

2—Service, ground, entrance switch and cabinet, meter board, etc.

3—Installing switches and receptacles.

4—Bell work.

This separation can easily be made by the workmen on their daily time cards, and the records can be kept on the Association form known as the Job Record Sheet. The cost of material should be found for each of the four divisions, which is a very simple matter. Each job should then be tabulated, showing for each division, the hours and cost of labor, the cost of material and the total cost.

LARGER JOBS—On the larger jobs, such as large resistances, apartment houses, commercial buildings, etc., the same records should be kept as for small house wiring jobs, except that the workmen should show on their time cards the total number of outlets installed each day by each crew, and a record should be kept showing for each crew the hours, outlets and hours per outlet for each day. Also for each crew, the total hours to date and the total outlets installed to date should be figured, preferably every day, but at least once a week. Such a record requires a very small amount of labor in the office and will probably pay for itself in reduced labor costs many times over on any job. A suggested form for such a record is shown below.

Records should be kept of the total hours and cost of labor on the other divisions of the work, but no daily records of the amount of work done are advised because they would necessarily be quite complicated. The totals should, however, be checked against the estimate when the job is completed, and should be permanently recorded as a guide in future estimating.

Estimating

NEW RESIDENCE WIRING—The contractor who has had little experience with armored cable work should follow the methods which are standard in estimating rigid conduit jobs, that is, the work should be laid out on the plans, the quantity of cable should be scaled off, and a pricing sheet (A. E. I. Form

Unit Labor Record—Branch Circuit Roughing In

		This Date			Total to Date		
Date	Name	Hours	Outlets	Hours per Outlet	Hours	Outlets	Hours per Outlet

4E) should be filled out, listing all material required. In scaling lengths of cable, assume that all runs in ceilings (or floors) are to be parallel with the building walls with right angle bends, allow for all vertical runs, and add 2 feet per outlet to cover the length stripped at outlets and the length taken up by bends at outlets. No data is available which proves the accuracy of this method; the quantities estimated in this way may be slightly over the actual amount required. The method should be carefully checked by comparing the estimated quantity with that actually used. Note that the hours of labor per outlet given in the table for standard types of houses cover all the labor on the outlet boxes and cable, no additional labor is to be figured on the cable. Labor units on installing services, entrance switches and cabinets, ground wires, switches and receptacles and bell work are given in the A. E. I. Estimating Manual, Sections 1 and 2.

After itemized cost records have been kept on a number of jobs in the manner previously explained, the contractor may follow the method explained in Section 2 of the Manual for Knob and Tube Work and make up estimates and fix his selling prices on light outlets, receptacle outlets, singe-pole, 3-way and 4-way switch outlets, and complete services and grounds of the type commonly installed in his locality.

OLD HOUSE WIRING—The most practical method of estimating this work is that given in Section 2 of the Manual for Knob and Tube Work. The contractor should prepare a detailed estimate and compute his selling price for each item, in the same manner as explained under the heading of new residence wiring.

LARGE RESIDENCES—Unusually large and fine residences present a very difficult problem in estimating, regardless of the kind of wiring installed. The data obtained so far on houses of this class is not sufficiently complete to allow definite conclusions to be arrived at. The following method will probably give safe results, but should be checked against actual job records.

Lay out the work and scale off the quantities of cable, and fill out a pricing sheet with a complete list of material. Labor units are based on the use of conduit type outlet boxes throughout as only this type of boxes should be used in houses of this class. The labor units given in the table for outlets are intended to cover all the labor, no additional labor is to be figured on the cable. All outlets in such a house will require careful locating and time for this is taken care of in the units. An additional allowance of .5 hour is to be made for each outlet occurring in paneled or otherwise ornamented ceilings or walls which will require exact locations. A job factor is then to be applied to the total hours figured for the branch circuit work to cover the delays incident to residences of this class. This job factor will in general increase with the size of the house. For a very large, fine home costing in the neighborhood of $250,000 or more, the factor will have the maximum value of 140 percent. This may be reduced to nearly 100 percent for a house which is distinctly in the finer class but contains only 10 or 12 rooms.

Standard Times for Installing Branch Circuit Armored Cable and Outlet Boxes and Approximate Quantities of Cable

Class of Building	Hours per Outlet	Feet of Cable per Outlet
Common 5 to 10 room New Residence for 1 Family	.50	16-18
Old Residence, double second floor, no floor or single pine floor in attic	1.50	18-20
Large, Fine New Residence	.85	18-20
Add for each outlet in paneled work	.50	
If ceilings are stripped so that joists need not be bored for cable, deduct	.15	
NOTE: A Job Factor, maximum value 140%, must be applied in this case.		
Apartment Building	.45	12-16
	Hours per Outlet	**Hours per 100 ft. of Cable**
Commercial Building	.35	
Cable run parallel to or over joists and requiring no boring		.60
Cable for which joists must be bored		4.20

NOTES:

Each switch and receptacle is to be counted as one outlet.

The standard times in the above table include all labor for installing cable and all outlet boxes for light outlets, switches and appliance outlets, but do not include time for installing the switches and receptacles in the boxes. For the latter, see Section 1 of the Manual of Estimating, Table 14.

Single houses for 2 or 4 families will take the same labor per outlet as a common 1 family house. For 1, 2 or 3 family houses built in quantities, the apartment house labor should be figured.

The figures for feet of cable per outlet are only approximate. The quantity of cable should in all cases be scaled from a layout, until the estimator has determined reliable average figures from his own job records. From actual job records, the 3-wire cable used is from 10 percent to 30 percent of the total.

Example for Use of the Job Factor: Suppose that the house is to have 80 ceiling and bracket outlets and 120 switches and appliance outlets, and that 45 outlets occur in paneled walls and ceilings. The job factor is taken as 135 percent. The labor is to be figured as follows:

200 Outlets at .85 hours	170 hrs
45 Outlets in paneled work at .5 hours	22.5 hrs
	192.5 hrs

192.5 hours × 1.35 = 259.9 hours = estimated time,

APARTMENT BUILDINGS—The same method should be used as described for new houses, except that it is advised that the quantity of cable should always be scaled from the lay-out. Standard quantities of cable per outlet cannot be safely used, because apparently slight differences in layouts may cause unexpectedly large differences in the quantity of cable required.

COMMERCIAL BUILDINGS—Under this head are included one story store buildings, and buildings of two or more stories having stores on the ground floor and offices, apartments or lodge halls above, all of course of frame interior construction.

A layout should be made and the quantities of cable scaled off. Then go over the plans a second time and scale the length of cable which runs parallel to the ceiling joists and the runs, if any, which run over the joists and will require no boring. Deduct this quantity from the total quantity, the remainder being the length of cable for which holes must be bored. Fill out a pricing sheet and figure labor on the outlets and on the two classifications of cable as per the units given in the table.

Tables of Standard Times

The standard times here given are not by any means the minimum figures, but are figures which should be reached by any contractor who installs 15 or 20 armored cable jobs in a year, and who is willing to make some effort to see that his men follow the proper methods.

The Reasons for A Code of Minimum Standard

MANY people have at one time or another questioned the advisability of having a code of "minimum standards." A super code—one requiring the best kind of a wiring job has been urged. Last year at the annual A. E. I. convention a debate was staged on this question.

There are none who will not agree that the better job—the one wherein better materials and better workmanship are employed—is the one to be desired. Quality wiring is and should be a slogan of the entire industry.

Nevertheless, there is another side to the question that is seldom pointed out. *Only a minimum standard can be enforced.*

The state has certain police powers which may be passed on to the local political division. These police powers protect the people against harmful acts of individuals only so far as saftey, health, morals and the like are concerned.

It is apparent, therefore, that the police power of a city does not extend beyond requiring, in the case of wiring, safety. If a thing is safe, it is safe. There is no question of degree of safety. True, it would be fine if we could use only the best, but no law can compel the use of anything better than that which fulfills the requirements of safety.

This has been very carefully and thoroughly set forth by the Bureau of Standards in the final report of the subcommittee on plumbing of the building code committee, recently issued. The following principles, the report sets forth, may be considered as safe guides in the matter of government control. While they specifically refer to plumbing, the same principles apply to the installation of electric service:

1. The control of plumbing by government is distinctly an act done under the police power, because it has to do with protection of the health of the people against injury, using this term in its broad and popular sense.

2. This use of the police power resides fundamentally in the State governments, but may be and often is delegated to cities, towns, or other subdivisions of States.

3. The police power has not been delegated to the Federal Government, except so far as needed to carry out certain delegated powers (as, for example, quarantine); hence, the Federal Government has only advisory powers regarding its employment by States.

4. Plumbing regulations can not legally contain requirements which do not, either directly or indirectly, prevent injury to health, safety, morals, or the like. No requirements can legally be made which have to do merely with economies of construction, with benefits to the house owner or occupants, or with benefits to manufacturers, traders, or laborers.

5. Plumbing materials are properly subject to legal regulation in so far as their reliability in preventing dangers to health is concerned, looking ahead to a reasonable life of the building.

6. Methods of plumbing construction are properly subject to legal regulation in so far as they may be necessary to guard against danger to health through faulty workmanship.

7. The control of plumbing by the system of permit and inspection and test is a logical and apparently a satisfactory way of guarding against injury to health through faulty plumbing; but in view of different conditions existing in large and small communities, the State should delegate to local communities the manner of administrating this control.

Licensing Justified

8. The system of examining plumbers is for the public benefit and should be continued, but it might be better for the examining authorities to issue certificates of competency rather than "licenses".

9. The requirement that plumbing work, subject to permit and inspection, be done by licensed plumbers is justifiable under the police power.

10. Standardization of plumbing designs, so far as dimensioning is concerned, standardization of plumbing materials, and even standardization of code requirements are for the public benefit, rather than for protection against injury, and should be brought about by agreement and concerted action. They can not be required legally under the police power.

11. As the police power resides in State governments and as uniformity in plumbing regulations is for the public benefit, it is well for all States to have simple, uniform, State wide plumbing regulations alike in essential respects, limited to matters which properly come within the scope of the police power under a wide range of conditions, with provision for permitting local communities to regulate installation and inspection by such methods as they see fit to adopt. These may be appropriately called "basic plumbing principles".

12. The residence or dwelling is the basis for plumbing codes, because the majority of all buildings are of this type. A code applicable to dwellings is also applicable, although not necessarily sufficient, for other classes of buildings. Buildings differ as to plumbing conditions, so that different regulations for different classes of buildings are fully justified under the police power. In fact, to apply the same regulations to different conditions; that is, to require practices necessary in one case for another case where they are not necessary, is an improper use of the police power.

13. It is a well-established principle in drawing specifications for works which involve operation that guaranteed results and detailed methods of construction should not both be specified at the same time. If certain guaranteed results are demanded, the contractor should be allowed some latitude in construction, and if detailed methods of construction are specified, it should be expected that the desired results will follow as a matter of course. Similarly, if reliance is placed on a general code of basic plumbing principles, there should obviously be freedom of choice as to many details; whereas, if cities or towns choose to adopt a more rigid and detailed set of requirements, compliance with them should be regarded as prima facie evidence that the desired results will be obtained.

Chats on the National Electrical Code

A Monthly discussion of wiring practice and questions of interpretation, presented with a view toward encouraging a better understanding of the industry's most important set of rules

By HUBERT S. WYNKOOP, M. E.

What is an "Outlet"?

We are endeavoring to secure an amendment to our ordinance in order to bring it into line with the 1923 Code. The discussions arising from this situation have made necessary answers to many questions—in fact, we have had to give rulings in advance. For instance:

"What may be connected to a branch circuit outlet?"

"What you please, within the capacity of the outlet."

"A four-light fixture?"

"Yes."

"A duplex receptacle?"

"Yes."

"A 20-ampere, heavy duty receptacle?"

"No!"

"Suppose I connect a 4-light fixture to each of the twelve outlets?"

"The fuse will probably blow."

"Isn't the householder likely to overfuse?"

"Perhaps."

"Well, why are you so complacent about it?"

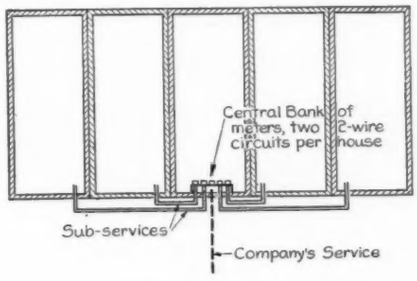
"Because we do not anticipate that the temptation, under the new rule, to overfuse will be materially greater than under the present one. We are inclined to believe that the householder will be less likely to continue his present practice of keeping in reserve a few cartons of double-duty sockets and 30-ampere fuses, for use after the inspector has passed the job."

"Is a duplex receptacle one outlet, or two."

"One; it is the equivalent of a rudimentary 2-light fixture."

Two Services in One Building

It sometimes happens that a row of store buildings which are physically independent of each other are held under one owner, with whom the lighting company gladly arranges to have all the meters grouped in the janitor's basement. This seems to us almost, but not quite, a "factory yard" proposition, where service switches and cutouts might not be required for each building. However, we have been in the habit of requiring service appliances for each building; but under this latest scheme,



if two service lines enter one building, we must accept two service switches and cutouts, otherwise the scheme of metering would be thrown out of gear. A typical layout is shown.

Three-Wire Split Riser

I have been told promptly what is the matter with the riser layout described in the August Chats. The criticism is, that unless the common neutral is carried through all the meter pans, the potential taps will have to be exposed. In such a case it will be possible to cut the taps without opening the circuits; and current will flow through the meters without being registered. This is a matter of great concern to the lighting company.

Sizes of Panelboards

The relation between rating of panelboards and the total capacity of their branch circuits is actively under discussion and will undoubtedly lead to some elaboration of the branch circuit rule in the next Code. I assume that, when a decision is arrived at, it will furnish a clue as to the proper capacity of the mains feeding a panelboard. It will be recalled that I have been consistently calling for a general determination of riser sizes on the basis of branch circuits supplied, rather than on some assumption of imaginary values for the connected load.

When one considers that only five or six percent of all jobs ever fall into the hands of architects or consulting engineers, and that the great majority of installations are laid out by contractors in their own way and on a competitive basis, it is not surprising that there is need for a rule based on *things that can be counted*, and not on vague statements as to what the customer is supposed to do with the equipment after he gets it. On the other hand, the 5 percent of engineered jobs are most certainly entitled to consideration, and will undoubtedly get it when experience has taught us what to put into the next Code.

Grounding Wire in Conduit With Other Wires

It is evident, from questions which have come to me, that my August Chat on this subject needs elaboration.

The case under discussion is one of grounding the neutral of a 3-wire alternating current secondary. The most direct route, and one offering ample protection from mechanical injury, is as was shown on the sketch. Section 904c is not violated, because the conduit is not "used as a part of the grounding conductor." Section 905e is not violated, because permission was granted to connect to a grounding stud in the service cabinet, thus providing a house conduit ground. Section 503j is not violated, because the grounding wire is not "of a different system." The case is unusual; but I do not know for what reason to condemn it.

Bank Vault Wiring

The wiring of bank vaults is quite special. The headroom is usually scant, the architects prefer rectangular raceways to round conduit, and some allowance has to be made for the need of burglar proofing the vault. For example, the outlet box set in the concrete is usually filled with paraffine or equivalent, in order to prevent the blowing in of explosives; and the wires from this box into the interior of the vault are staggered through the various steel plates for the same reason.

After studying the situation for some months, our Department has issued the following special rules, which may perhaps win the approval of other inspection departments:

Runs from the outlet just outside the vault to the first outlet within the vault shall be composed of approved lead sheathed rubber covered wire, 0 to 600 volts, run in approved conduit.

The junction box which is usually set at the inner surface of the concrete wall of the vault may be permanently concealed by the steel inner lining of the vault, but the lead covered wire must be long enough to extend well into the interior of the vault.

The surface method of wiring of the vault proper may consist of steel channels conforming to the following table:

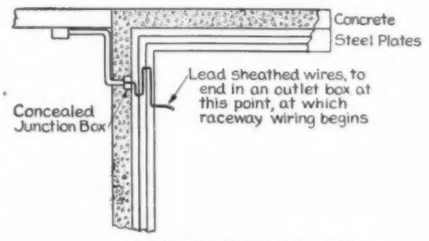
½ in. by 2 in. single channel; thickness of metal .056" (No. 17 U. S. sheet metal gage).

½ in. by 3 in. single channel; thickness of metal .078" (No. 14 U. S. sheet metal gage).

½ in. by 4 in. double channel; thickness of metal .056" (No. 17 U. S. sheet metal gage).

The single channels shall be supported by means of substantial metal straps held in place by machine screws set into the steel surface of the vault; or the screws may pass through the enclosure if covered by sleeves which will present a smooth surface to the wires.

The double channels shall be fastened as above, or may be fastened by machine screws passing through the partition wall of the


Concrete
Steel Plates
Lead sheathed wires, to end in an outlet box at this point, at which raceway wiring begins
Concealed Junction Box

WIRE ENTRANCE TO VAULT

channel and set into the steel surface of the vault.

Since the electrical and mechanical continuity of the raceway and fittings is provided by the fastening of all parts to the metal surface, no bonds or couplings will be required.

In the wiring of bullseye fixtures, when excessive heat is apt to be encountered, the taps from the circuit wiring shall have approved heat resisting insulation.

Monopolistic or Competitive Compensation Insurance?

(Continued from page 20)

The latest official appraisal of the monopolistic Ohio fund was made by the Ohio Director of Industrial Relations, who asserted that there were at the time of his report in the early part of 1923 almost four thousand claims which had never been heard, pending before the commission, that claimants are obliged to wait for weeks and months before compensation is allowed them and that thousands of letters of inquiry addressed to the department during the previous eighteen months had never been answered.

The foregoing conditions, it must be admitted, could never come into being in either mutual or private companies, which are regulated by the state and which depend for their existence upon rendering an efficient service to their policyholders.

There are many other arguments which have been and are being used against monopolistic state funds for workmen's compensation insurance, but, as it was stated before, the electrical contractor is interested in only these two: Is state insurance any cheaper in the long run? Does it work?

Perhaps in future ages when human nature as represented in politics shall have purged itself of greed, laziness and procrastination and bureaucracy shall have become as efficient as private business is forced to be, the answer to both these questions may be, "Yes." But until then present and past experience will incline the business man to turn thumbs down on state monopoly and favor competition, which is the life of insurance just as much as it is of any other trade.

Arranging the Store

(Continued from page 25)

around to find where the most valuable space is located can well be adopted by electrical stores. In this way, it can be determined if the vacuum cleaners, for instance, should be displayed to the immediate right of the entrance or midway down the store. By experimenting with various arrangements, and keeping an accurate record of the results, it will be possible to satisfactorily determine the sales value of the various parts of the store.

It should always be remembered that the electrical store exists only for the satisfaction of its prospects. If the opportunity is presented to choose a store, the consideration of the space, from its possible display advantages, should certainly be taken up. In this respect, the store is very much like an advertisement or even a demonstration—it is one medium through which sales can be made.

Cost Data on Large Office Building

(Continued from page 17)

$0.08 per foot. This system consisted of the half round open bottom fiber duct type laid on a cement pad and the cost of laying same is not included.

The factors making for the costs noted are considered by us to be generally as follows:

1. Competent job superintendent.
2. Purchase and delivery of materials at the proper time.
3. Efficient construction gang.
4. Efficiency of builder in expediting the work and avoiding congestion of materials and rubbish on floors.

Attention is called to the item of 27 percent for job overhead indicated on each chart and this represents the non-productive labor such as job supervision, clerical work, handling materials, etc.

Selection and Training of Salespeople

(Continued from page 18)

The salesperson must avoid showing unnecessary attention to a customer. Too much talking on the part of the salesperson is perhaps worse than too little. A prospective sale may be lost by the salesperson's over zealous line of talk. The customer should be shown the essential points of the appliance; its utility quality of materials employed, workmanship, economy resulting from its use, etc.—and then the desire to purchase on the part of the customer should be carefully tested by the salesperson, without undue eagerness. Once the customer makes the decision to buy, all further unnecessary talk should cease. The sale is made, and the final steps as to mode of payment, cash or charge, name and address, should be proceeded with. A courteous "Thank you" on the part of the salesperson, and a polite "Good day" or "hope to have you call again" will leave a favorable impression in the mind of the customer.

The salesperson should be shown how to display the stock of appliances to best advantage, both from the view as to the attractiveness to the customer, as well as convenience of access and demonstration on the part of the salespersons. Setting up a show window display is good training, and should be encouraged, as it calls forth study and ingenuity, in the arrangement of the various articles.

Lighting Contests to be Held By Two-thirds Electrically Served Population

IN over three thousand communities in the United States and Canada, Home Lighting Contests are about to begin. During the current month, the entire electrical industry will join together and give its message to over forty million persons.

Never before in the history of the industry has a cooperative movement brought all branches together in the manner that the Better Home Lighting Activity is now doing. If the campaign does nothing else but promote better feeling among the various electrical groups it will be distinctly worth while.

However, this is only a small part of the benefit that is bound to result from the work that is being carried on by the Lighting Educational Committee. Millions of school children will enter the Home Lighting Contest and study principles of home lighting. From this competition an adequate understanding of the principles of correct lighting will be obtained by the children and their parents as well, with the result that in future years there will be less defective vision.

The tremendous growth of defective vision among school children lead the electrical interests some months ago to get together and organize an activity to reduce this menace. The industry felt itself responsible for this trouble, because in general adequate information had not been given to the public on the proper use of lighting. In a few years the efficiencies of incandescent lamps have increased greatly, and unless proper precautions are taken the glare from these lamps will injure the eyes, and also the gloom of insufficient light cause serious trouble.

When the Lighting Educational Committee was formed it was expected that the educational activity could be extended to a maximum of 1500 communities where electric service was available.

How the Country is Organized

REGION	Population Organized	Population With Elect'y (1921 Statistics)	Percentage Organized
1—New England	2,792,434	6,257,256	44.6
2—Eastern	12,472,722	19,047,050	65.5
3—East Central	3,035,967	5,776,222	52.6
4—Middle Atlantic	447,142	2,231,632	20.0
5—South Eastern	1,682,265	3,262,525	51.6
6—Great Lakes	8,207,435	10,863,951	75.5
7—North Central	671,722	1,505,910	44.6
8—Middle West	3,433,096	4,614,608	74.4
9—South Western	2,423,865	3,025,887	80.1
10—Rocky Mount'n	259,970	785,100	33.1
11—North West	524,886	2,229,151	23.5
12—Pacific Coast	1,474,972	3,543,066	41.6
Total—All Regions	37,426,476	63,142,358	59.3

The plans made by the Lighting Educational Committee included this number of cities as its goal. On account of the character of the campaign, that is the Home Lighting Contest, it was expected that difficulty would arise in trying to organize communities of less than 5,000 population.

On the eve of the campaign a new estimate is being made. Already 3,000 communities have signified their intention of holding Home Lighting Contests, and it is believed a thousand more villages, towns, and cities have plans made and are ready to start.

It is now known that low population is no bar for holding Home Lighting Contests; the smallest communities are organized and contests are already under way. Communities which are definitely known to be organized, and this is only about 75 percent of the total, constitute a total population of forty million. If we compare this with the total population of the United States, it does not seem to be a great proportion.

However, according to statistics compiled by the Society for Electrical Development only sixty-three million persons in the United States have electric service available. As it is not possible to organize contests in communities which have no electric service, it can be safely said that about two-thirds of the population that can be organized will hold contests.

So great has been the effort that has been expended to organize these communities, which contain forty million persons, that it is difficult to realize how it is possible that this could have been done. Six weeks ago the organization work had just begun, and in only a few communities had plans been started to hold contests.

The electrical industry, however, will not be satisfied with two-thirds organization, and electrical men in the unorganized communities should get together to make the Better Home Lighting Activity a 100 percent job. Although, contests are starting in almost all of the towns on October 1 there is still time to organize and have local contests. According to the rules laid down by the Lighting Educational Committee local contests must not close until December 1. If contests have not been organized in your community plans can be made now, and the contest can be held in the month of November.

Send Cash With Order

At the time of going to press the Society for Electrical Development reported that nearly 4,000,000 pieces of material had gone out for the campaign. Such tremendous totals involve considerable money. For that reason the executive committee of the Lighting Educational Committee at its meeting two weeks ago passed a resolution that no orders for service material in connection with the Home Lighting Contest would be filled unless cash was received with the order. It was estimated that $250,000 would be required to finance the community orders and that this money is not available. Furthermore, no clerical means is available to bill those who do not send cash.

Free Insurance for All the Help

Plans Under Which Members of San Francisco Electrical Contractors and Dealers' Association Are Now Operating

JOURNEYMEN, helpers, office and shop help and even the managers, all employees, in other words, of members of the Electrical Contractors and Dealers' Association of San Francisco are now insured for $1,000 apiece without cost to the employee. This insurance is presented to the employee after one month's continuous service and continues in force so long as he is employed by a member of the Association or for two weeks after leaving the service of an association member.

The policy is not a substitute for the Workmen's Compensation Act. The cost to the employer is $7.60 annually per $1,000 of insurance carried.

The terms of the policy are very simple. They are as follows:

1—Life Insurance—$1,000 payable in the event of death at any time and from any cause.

2—Total and Permanent Disability Insurance—$1,000 payable in one sum or in installments in event of becoming totally and permanently disabled from any cause whatever, before reaching age 60.

3—Health Booklets—The employees will receive Health Booklets published by the Life Extension Institute of New York, which will be distributed periodically. Information and advice can be had by writing or consulting with the medical director at the home office.

4—Nursing Service—Free nursing service will be available to all employees residing in San Francisco. The nurse will make as many calls on the sick or disabled employees as she or the doctor in attendance thinks necessary.

The insurance plan enables an eligible employee to obtain life insurance protection, regardless of age, occupation or physical condition upon a cooperative basis. It does away entirely with the necessity of a medical examination.

Furthermore, if an employee leaves the service of an association member he may within 31 days have his policy changed into one of the regular individual policies of the West Coast Company without medical examination.

The righthand inside page of each policy contains a letter to the employees signed by the employer which briefly points out the benefits to be secured and then states in a most friendly way the human relationship that must necessarily exist between employee and employer as follows:

WEST COAST LIFE
INSURANCE COMPANY
HOME OFFICE - SAN FRANCISCO

Has Insured the lives of certain employees of certain employers who are members of the

Electrical Contractors and Dealers Association of San Francisco

_____ Employer

by a Group Policy of Life Insurance, No. 77,012, issued and delivered to said Association. Under and subject to the terms and conditions of said policy, and the application therefor, the life of

_____

an employee, is insured for the sum of

ONE THOUSAND DOLLARS

If death occur while the Employee is in the employ of the Employer, the amount of insurance in force on said Employee, in accordance with Group Policy as above, will be paid to.....BENEFICIARY.

Any sum payable as a death claim shall be payable to the beneficiary designated by the Employee, which beneficiary may be changed at any time under and subject to the terms of the policy. If the last designated beneficiary does not survive said Employee, or if no special beneficiary has been named by said Employee, said sum shall be payable to the wife or husband of the insured, if living at the death of the insured; if not, to the children of the insured who survive the insured, equally; if none survive, to the father and mother of the insured who survive the insured, equally, or to the survivor; if neither survives, to the brothers and sisters of the insured who survive the insured, equally; if none of these survive the insured, then to the estate of the insured.

This insurance will be terminated whenever the said Employee ceases to be in the employ of said Employer.

In case of the termination of the employment for any reason whatsoever the Employee shall be entitled to have issued to him or her by the West Coast Life Insurance Company, without evidence of insurability and upon written application made to the West Coast Life Insurance Company within thirty-one days after such termination and upon the payment of the premium applicable to the class of risk to which he or she belongs and to the form and amount of the policy at his or her then attained age, a policy of life insurance in any one of the forms customarily issued by the Company, except term insurance, in an amount equal to the amount of his or her protection under such group insurance policy at time of such termination.

West Coast Life Insurance Company

Date_____

Certificate No._____

SPECIMEN
PRESIDENT

Specimen Policy Given to Employees of San Francisco Association Members

"We have secured those additional benefits for you in recognition of the truth that there exists between employer and employee a human as well as a business relationship. Because of this human relationship we take this means of sharing with you your responsibility to your wife, children, parents, or others who may be dependent upon you. We wish you to know that we regard your spirit of loyalty and good will as one of our most valuable assets."

This insurance feature it is reported, is greatly appreciated by the San Francisco employees. It has been a blow to the local unions because one of their chief holds on the men was the claim that they could buy cheap insurance only through the union. Now so long as they work for association contractors they get it for nothing.

By dispensing with the regular medical examination the policy to men who have passed the age of forty or forty-five, not to speak of those who are not considered good risks.

Information Others Have Asked For

Is Conduit Necessary for Telephone Wiring?

A member writes to us stating that he is installing a private telephone system, and that the manufacturers of the equipment have stated that all the wiring should be run in conduit. He questions the necessity of using conduit.

It is pretty well understood that in the case of low tension wiring such as telephone work which involves no fire risk, conduit serves just one useful purpose, that of providing mechanical protection for the insulation or other covering on the wire. A possible exception to this statement might be the use of conduit when low tension wires are run concealed in fireproof construction; here conduit would of course be used to provide a raceway for the wires. Whether or not to run telephone wires in conduit when the work is exposed, or concealed in a building of frame construction, is an engineering problem and like all engineering problems, must be decided by balancing the advantages to be gained in a particular case against the extra cost of enclosure of the wires in conduit. It can hardly be found that the use of conduit is necessary, for one has only to look around in any building in which there is a telephone to learn that by far the greater proportion of telephone wiring is not installed in conduit.

Master Switches for the Control of Lights in Residences

A SUBSCRIBER has asked how he can install an additional master switch in a residence in which he had recently completed the wiring, and which was so wired that certain lamps in various parts of the house could be turned on from the owner's bedroom.

The wiring was installed according to the well-known method shown in Fig. 1. In this diagram, A is an outlet controlled by one local switch, B is an outlet controlled by two local switches, and C is controlled by three local switches. The master switch is a single-pole. All lamps controlled by the master switch are of course dependent upon one fuse, and therefore the total

Every month the Association of Electragists, International, receives from members and others letters asking for help on some particular problem or for information on how to use to the best advantage the data and other helps developed by the Association. What is a problem to one man probably is a problem to many and for that reason the questions and their answers will appear here monthly.—Editor.

load so controlled must not exceed that allowed for one circuit.

In the case brought up by our subscriber, the number and wattage of lamps under the control of the master switch required that they be wired on

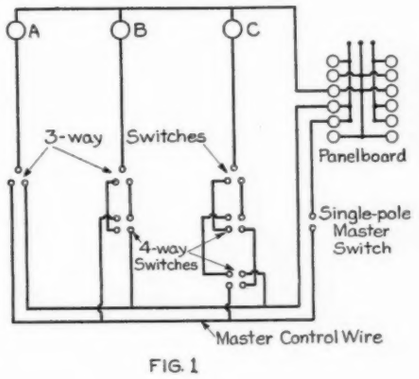


FIG. 1

four circuits. Therefore in place of one single-pole switch, four were required. Actually, two double-pole switches were used instead of the four

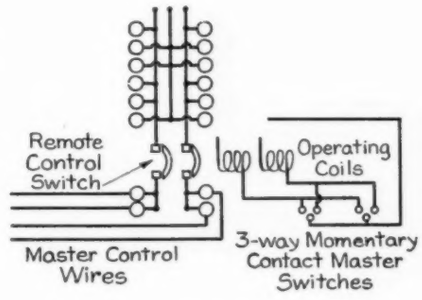


FIG. 2

single-pole. Four master control wires were of course installed from these master switches. In other words, our diagram, Fig. 1, was in this case quadrupled.

In the simple case shown in Fig. 1, it is evident that another master switch can be added by merely installing a pair of 3-ways in place of the single-pole master. But four pairs of 3-ways would be expensive to install and inconvenient to operate.

The best solution of the problem is shown in Fig. 2. A double-pole 250-volt remote control switch controls mains leading to a separate section of the panel board or to a suitable porcelain fuse block. The remote control switch is operated by two 3-way momentary-contact switches, which really become the master switches. In the diagram, the connections to the operating coils of the remote switch are not completed, because this would add considerable complication, also because these connections will depend upon the type of remote switch used.

A very full and complete discussion of the use of master switches and remote control switches will be found in the book by Terrell Croft, entitled "Lighting Circuits and Switches".

Job Record Sheet for Small Work Only

In answer to a query concerning the new Job Record Sheet it was pointed out that the sheet is not intended to be used for making up an estimate on a large job. The A. E. I. has a complete set of forms for this purpose. Nor is it in any way intended to take the place of the regular cost record system used by the larger contractors for the larger class of work.

The Job Record Sheet is intended to be used only on house wiring jobs and other small work as a complete record of the labor, material and cost, and it is the expectation of the A. E. I. that the small contractors who do not have a very complete cost record system at the present time will use it.

The sheet might also prove to be of value to the large contractor in keeping cost records on small jobs because it is such an inexpensive system. The one difficulty in the way of this, of course, will be that it introduces a second cost record system.

As It Seems to Us:

TO THOSE NOT PRESENT

Hundreds of our readers will be at West Baden this week attending the sessions of the twenty-fourth annual convention of the Association of Electragists, International. Thousands will not and it is to them that this message is sent:

The convention is for you though absent, just as much as for the more fortunate ones who could be present.

The papers and reports there presented, the discussions and actions are not for the benefit alone of those present but for the entire electrical contracting and dealing profession.

The convention gives a setting, an opportunity to make these reports—it helps to inspire those present that they may go back to their several jobs reinvigorated with enthusiasm. That enthusiasm that comes from personal contact and elbow rubbing with hundreds of men doing the same thing of course is denied to those who could not get away.

On the other hand, the inspiration of the addresses and reports can be felt by everyone if the spirit is but willing. Next month this will be completely reported. Don't fail to read it because the report is largely for those who could not make the trip.

Furthermore the convention is in session but a few days, but it lasts for at least a year. The policies there adopted, the methods explained, the principles elucidated, the resolutions adopted are all for practice during the ensuing months. Take them and make them a part of your business. The more generally they are adopted the better will be the entire profession.

This is your convention whether you are present at West Baden or not and its effect is lasting.

Now is the Time

From all indication we are in for a protracted decline in speculative house construction. There will always be a considerable volume of dwelling contruction but for the next few years it would appear as though the total would be below that of the last five years.

In a way the electrical contractor who specializes in house wiring should welcome this condition. New work isn't as profitable as old work, besides it ties up capital longer. It has to be done at a certain time and cannot be delayed. It is up and down, good today and bad tomorrow.

There is a tremendous amount of old house wiring to be done amongst houses already wired.

Take any house that was wired ten years or more ago and it offers opportunity for additional electrical work. After the Lighting Educational Contest has been concluded thousands of families will want better lighting and they won't be able to get it, most of them, without having their homes substantially rewired.

This rewiring of already wired houses is one of the biggest future markets for wiring that we have. Wiring of unwired old houses is bound to slow up.

It won't be necessary to sell electric service, only added comforts and convenience. The desire of the public is present and all that is needed is some bright young contractor to be Johnny-on-the-spot and get the contract.

Abolish Screw Plug Outlet

Now that attachment plugs are virtually all separable there is no good reason for continuing the installation of convenience or appliance outlets of the screw plug type. This type of receptacle is dangerous where there are children. When fitted with hinged caps it is inconvenient to leave the screw plug permanently in the receptacle because the cap is sticking out.

The screw plug receptacle of this type has served its usefulness but its day has passed. Some cities are legislating against it.

Good contractors with public safety in mind will not install them.

The Dahlia Grower

Did you ever try to raise dahlias? They are funny flowers. One fellow gets beautiful big prize blossoms, another gets just good ones and another will get only little scrawny ones.

This summer on our block four of us didn't get a flower. There were plenty of buds but they never matured. The fifth fellow is getting wonderful blossoms.

The electrical contracting business is something like dahlia raising. There have been lots of jobs (buds) this year but for many contractors they haven't matured. And then there is the fourth or fifth contractor who is just bustling with business.

When one fellow in the block raises fine dahlias we other fellows know it can be done and we try to find out his reason for success—and next year we are going to do likewise.

If every fourth or fifth contractor can and does keep busy it is dead certain that there is business to be had, but how?

The fellow who raised such nice dahlias can give the answer. If his plants were buggy he sprayed them. If the ground was very dry he watered it well and he cultivated frequently. He didn't try to get a flower from every bud but only the more promising. He got results but he worked for them.

There is plenty of business for the contractor if he will work for it. Be like the dahlia grower. Don't try to get every job that there is in sight but concentrate on the most

promising. If jobs are scarce dig up new ones. If competition is terrible on competitive work, seek out non-competitive work or else kill off the cut-price competitor by spraying with suggestions for improving the job.

Be like the dahlia grower—work!

Charging for Dealer Helps

The manufacturers are working on plans to reduce what they call "the awful waste of dealer helps" and they are having some success. Last month we had an article dealing with this situation.

So far as we are concerned there is but one answer—"Anything that will help the dealer use dealer-helps more intelligently is good."

We aren't thinking so much of the cost because the waste after all is the fault of the manufacturer. He has been too urgent. The material has literally been forced on the dealer. Our point is this: That free dealer-helps are a legitimate sales expense for the manufacturer.

However, the psychology of a human being is such that free distribution of dealer-helps does not seem to bring about the desired results. Here are the best publicity and display brains of the entire industry available to the dealers and they aren't taking advantage of them as they should.

Will the situation be bettered if a nominal charge is made?

It would seem to us that if a nominal charge were made we would find that

1—Manufacturers would be less apt to load up dealers with dealer-helps.

2—Jobber salesmen would not be inclined to be so free with them.

3—Dealers would order only what they wanted and that

4—Dealers would be more apt to use what they were paying for.

For these reasons we are in favor of charging for dealer-helps.

The Third Element

You can use the best wire and schedule material available. You can hire the best mechanics you can find, and still turn out a rotten job—from the customer's point of view.

If the service entrance is over the coal bin so that the customer has to climb over ten tons of coal to change a fuse—if the supposedly "convenience outlets" are placed without regard to use—if in every room there is one lighting outlet and that is in the exact center of the ceiling—if there are only a few switches and those are poorly placed, if things like these happen all the quality of materials and workmanship will not be worth a tinker's dam in the minds of the customer.

In every quality job there is a third element—brains. If the contractor wiring a house will only think—think of the customer who is going to live there, he will find that before long business will look for him.

Many a contractor has pooh-hooed trying to sell on quality and not on price. They will tell you that they tried but got nowhere.

These were only two-element contractors, but when you find one with the third element—brains—you will find one who swears by quality work—good materials, good workmanship and thought for the customer.

How to Eliminate the Curbstoner

Letters, letters, letters, our office is full of them—all complaining about the curbstoner. From the tone of the letters one would almost think that the curbstoner was like the weather—something to complain about but do nothing.

If the curbstoner is an evil, not as against other contractors but as against the public welfare, then he can be curbed and well nigh eliminated. Before this can come to pass, however, the legitimate contractors must

1—Put their own house in order and

2—Then proceed in cooperation to make it impossible for the curbstoner to continue in business except he mend his ways.

What steps can be taken to eliminate the irresponsible contractor?

1—Work for the passage locally of the Model Ordinance which automatically

a Makes the National Electrical Code the basis of all electrical installation.

b Requires all electrical contractors to take out a license.

2—Secure from the local central station the promise to refuse to connect to any place that isn't wired properly.

3—If not organized in a local electrical league raise a substantial advertising fund from amongst yourselves, your jobbers and your central station to

a Let the public know who you are and what you stand for.

b Let the public know what constitutes a quality job and why a quality job should be specified.

c Let the public know what the Code is and what it means to be licensed.

4—Bring the Red Seal Plan to your town and back it up strongly.

5—Stop selling wiring and begin to sell electric service.

6—Adopt a Code of Ethics preferably that drafted by the International and abide by it.

7—Secure the assistance of the jobbers in

a Insisting that all credit customers have an adequate bookkeeping system.

b Refusing to grant credit to any contractor who cannot estimate.

c Refusing to grant credit to one just starting in business unless he has adequate capital.

Only whatever is done it should never for a moment be forgotten that the guiding thought must be to protect the public welfare. Do not work to reduce competition because that will be against the public welfare and will be illegal.

Curbstoning is not competition, it is destruction.

ORGANIZATION ACTIVITIES

STATE CHAIRMEN AND SECRETARIES

State	Chairman	Secretary
Ontario, Canada:	Harry G. Hicks, 203 Church St., Toronto	J. A. McKay, 24 Adelaide St., W., Toronto
British Columbia:	S. E. Jarvis, 570 Richards St., Vancouver	R. A. Graham, 929 Pender Street, W.
Alabama:	J. R. Wilcox, 313 N. 19th St., Birmingham	D. B. Clayton, Am. Trust Bdg., Birmingham
California:	Victor Lemoge, San Francisco	Walter F. Price, 318 Call Bldg., San Francisco
Colorado:	J. Fischer, 213 15th St., Denver	H. Alex Hibbard, E. & C. Building, Denver
Connecticut:	Tryon Smith, 247 State St., New London	
District of Col.:	Frank T. Shull, Elliott St., Washington	H. R. Harper, 635 D St., N.W., Washingt'n
Florida:	Preston Ayers, Orlando	Charles E. James, Fort Pierce
Indiana:	T. F. Hatfield, 102 S. Meridian St., Indiana's	A. I. Clifford, 507 Odd F. Bldg., Indianapo's
Iowa:	E. B. Murray, Fort Dodge	C. E. Gourley, Cedar Rapids
Kansas:	C. S. Smallwood, 1017 N. 5th St., Kansas City	Arthur Tucker, 619 Jackson St., Topeka
Louisiana:	Robley S. Stearnes, 624 Carondelet St., N. Orleans	I. G. Marks, 406 Mar. Bk. B., N. Orleans
Maryland:	A. C. Brueckmann, Keyser Bldg., Baltimore	C. Philip Pitt, 7 St. Paul St., Baltimore
Michigan:	Henry Roseberry, 41 Pearl St., Grand Rapids	H. J. Shaw, 613 Lincoln Bldg., Detroit
Missouri:	A. J. Dunbar, Frisco Bldg., St. Louis.	G. E. Haarhaus, St. Louis
Mississippi:	W. J. Johnson, Meridian	A. H. Jones McComb
New Jersey:	Henry M. Desaix, Paterson	Robert Beller Newark
New York:	C. C. Miller, Oneonta	H. F. Janick, 29 St. Paul St., Rochester
N. & S. Carolina:	N. L. Walker, Raleigh	F. E. Robinson, Charlotte
Ohio:	C. L. Wall, 212 S. Main St., Akron	Walter R. Keefer, 939 E. McMillan St., Cin'nati
Pennsylvania:	F. Lloyd Smith	M. G. Sellers 1518 Sansom St., Philadelphia
Tennessee:	P. W. Curtis, Chattanooga	J. A. Fowler, 118 Monroe Ave., Memphis
Texas:	T. L. Farmer, 1809 Main St., Dallas	Charles W. Graham, 1642 Bryan St. Dallas
Wisconsin:	L. W. Burch, 202 E. Wash'n Av., Madison	H. M. Northrup, 25 Erie St., Milwaukee

LIST OF LOCAL ASSOCIATIONS AND MEETINGS

STATE AND CITY	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
ALABAMA				
Birmingham	J. R. Wilcox	313 North 19th St.	Tuesday 10 a. m.	
Montgomery	P. W. Crump	14 S. Court St.	Mondays	Members' Stores
ARIZONA				
Phoenix	F. C. Hoeppner	Hoeppner Elec. Co.		
CALIFORNIA				
Anaheim	Mr. Waite		Each Week, Friday	
Covina	F. Rambo		1st & 3rd Monday	Ontario
Fresno	Clyde F. Smith	1162 Broadway	Noon Daily	Goodfellow's Grill
Fullerton	J. A. Lenzinger	Brea, Calif.	Thursdays	Garden Grove Hotel
Long Beach	E. Cummings	So. Cal. Edison Co.	Tuesdays	Recreation Park
Los Angeles	Helen I. Mikesell	1009½ S. Hill St.		1109½ S. Hill St.
Oakland	Lawrence R. Chilcote	351 Twelfth St.	Tuesday 8 p. m.	Builders' Exch.
San Francisco	E. E. Browne	313 Fifth St.	12 Noon, Thursday	States' Cafe
South Pasadena	J. Jacobs	1128 Mission Street		Cham. Com. Bldg.
COLORADO				
Colorado Springs	Matt Whitney	208 N. Tejon St.	On Call	
Denver	E. Scott,	632 Fifteenth St.	2nd Tues. and 4th Thurs.	E. & C. Building
Pueblo	H. Ashcraft		2nd Tuesday	Commerce Club
CONNECTICUT				
Hartford	A. A. Angello	473 Park St.	First Tuesdays	Hotel Bond
Waterbury	D. B. Neth	Conn. Light & Power Co.	2d Tuesday Evening	
DISTRICT OF COLUMBIA				
Washington	R. W. McChesney	Munsey Bldg.	2d Thursday	Potomac Elec. Power Co.
FLORIDA				
Jacksonville	M. A. Ladd	Stinson Electric Co.	1st Tuesday	108 W. Bay Street
Miami	C. E. Pullen	Pullen-Zohl Co.		
GEORGIA				
Atlanta	W. W. Barr	Ga. Ry. & Power Co.	12:30 Friday	
Savannah	Sylvan M. Byck	141 Bull Street		Dafodil Res.
ILLINOIS				
Chicago	J. W. Collins	160 North LaSalle St.	4th Wednesdays	11 S. Lasalle St.
Master Contrs. Ass'n.	P. J. Boyle	31 West Lake St.		
Decatur	E. O. Weatherford	114 E. William St.	1st Wednesday	Y. M. C. A.
East St. Louis	C. F. Broderick	317 E. Broadway	Saturday 2 p. m.	Arcade Building
La Salle	Edward Blaine		1st & 2nd Tuesday	Post Hall
Peoria	L. B. Van Nuys	238 S. Jefferson St.	Mondays	Endres Hotel
Quincy	John Harbison	18th & Broadway	2d & 4th Wednesday	214½ No. 6th Street
Rock Island	John Weishar		Monthly	
Springfield	A. D. Birnbaum	916 W. Cook St.	Fridays	
Streator	William Schroder	613 Tyler Street		
INDIANA				
Evansville	O. P. Seitz	1814 Riverside Ave.	Mondays	Members' Offices
Gary	A. B. Harris	570 Washington St.		
Indianapolis	R. E. Snyder	704 N. Alabama St.	1st and 3rd Tuesdays	Chamber of Commerce
Peru	J. B. Johnston	West 5th Street	2d & 4th Monday	Labor Hall
South Bend	Mr. Moran, Jr.	832 N. St. Louis	1st Tuesday	B. & T. Ex. Building
Terre Haute	Carnoy Chess	523 Ohio St.	1st Thursdays	Asso. Bldg. Cont.
Warsaw	L. F. Meyers	120 E. Market St.	Wednesday Evening	
IOWA				
Davenport	Louis F. Cory		Monday 6 p. m.	Chamber Com.
Sioux City	E. A. Artz	211 Fifth St.	Monday 6 p. m.	Members' Offices
Waterloo	H. L. Hileman	600 Bluff Street		
KANSAS				
Arkansas City	E. C. Simmons		Mondays	Members' Offices
Salina	Geo. H. Shank	146 S. Santa Fe Ave.	1st Thursday	
Topeka	H. S. Lee	816 Kansas Ave.	Monday Noon	Elks' Club
Wichita	L. A. Harris	446 North Main	Every Tuesday 7:30	United Elec. Co.
KENTUCKY				
Louisville	Chas. Daubert	921 S. Third St.	Tuesdays	B. of T. Building
Paducah	W. R. Kitterjohn		Last Thursday	
LOUISIANA				
New Orleans	S. J. Stewart	531 St. Joseph St.	2 p. m. Monday	612 Gravier St.
Shreveport	R. L. Norton	620 Marshall St.	Wednesdays	Builders' Exchange
MAINE				
Portland	Lyman P. Cook	12 Free Street	On Call	Graymore Hotel
MARYLAND				
Baltimore	George Robertson	Park Bank Bldg.	2d and 4th Thursdays	Southern Hotel
MASSACHUSETTS				
Fitchburg	R. M. Gowell		1st Monday	Fay Club
Haverhill	H. W. Porter	24 West St.	2nd Monday	El. Light Station
Malden (Everett & Medford)	Harry J. Walton,	Malden Elec. Co.	Monthly	Malden Elec. Co.
Newton	C. L. Howe	897 Washington St.	2d Monday ea. month	Various Places
Pittsfield	Wm. J. Cullen	West St.	Monthly	Members' Offices
Springfield	A. R. Tulloch	11 Court House Pl.		Chamber of Comm.
Worcester	J. W. Coghlin	259 Main St.	2d Thursday	44 Front Street
MICHIGAN				
Detroit	H. Shaw	613 Lincoln Building	Last Thursday	G. A. R. Hall
Flint	J. Markle	718 S. Saginaw		
Grand Rapids	Henry Romyn	40 Ionia Av., N. W.	Tuesday Noon	Association of Com.
Kalamazoo	M. Randall	Exchange Place		Chamber Commerce
Saginaw	E. T. Eastman	209 Brewer Arc.		

ORGANIZATION ACTIVITIES—(Continued.)

STATE AND CITY:	LOCAL SECRETARY	STREET ADDRESS	TIME OF MEETING	PLACE OF MEETING
MINNESOTA				
Duluth	D. Ehlert	210 W. 1st St.	Subject to Call	
Minneapolis	W. I. Gray	511 S. Third St.	2d & 4th Monday	Builders' Exchange
St. Paul	E. Hoseth	993 Selby Avenue	2d & 4th Tuesday	Elk's Club
MISSOURI				
Kansas City	A. S. Morgan	4 E. 43d Street	2d and 4th Tues.	University Club
St. Louis	E. Bowman	644 Century Building	1st Wednesday	American Hotel
NEBRASKA				
Lincoln	G. G. Kingham	142 S. 12th Street	1st & 3rd Monday	C. of C. Building
Omaha	E. H. Drown	1818 Harvey St.	2d and 4th Thursdays	Builders' Exchange
NEW HAMPSHIRE				
Portsmouth	F. C. Hatch	Kittery	2d & 4th Wednesdays	
NEW JERSEY				
Atlantic City	F. P. Wright	16 Ohio Ave.	1st Thursday	Malatesta Hotel
Long Branch	Chas. Maggs	462 Bath Ave.	1st & 3rd Mondays	Commercial Hotel
Newark	John J. Caffrey	435 Orange St.	1st Monday	283 Plane St.
Paterson	H. M. Desaix	88 Ellison St.	Last Friday	P. S. Building
NEW YORK				
Albany	E. A. Stephens	71 Trinity Place	3rd Thursday	Pekin Restaurant
Binghamton	A. H. Hyle			
Brooklyn	H. F. Walcott	Pacific St. and 3d Ave.	1st & 3rd Wednesdays	Johnston Building
Electric Club	A. Stone	503 Myrtle Ave.		
Buffalo	H. H. Howell	54 Niagara St.		
Cooperstown	B. B. St. John	Oneonta	3rd Tuesday	Vanon
Endicott	A. H. Hyle	Binghamton	Tuesdays	Chamber Commerce
Glens Falls	W. F. Coombs	21 Main Street, S.		
Jamestown	Henry Lund	309 Main Street	3rd Monday	Black Bear Rest.
Nassau-Suffolk	Henry T. Hobby	Rockville Centre		
New Brighton	E. L. Taylor	Tottenville		
N. Y. Section, No. 1	J. W. Hooley	70 East 45th Street	1st Thursday	Building Trades
Independent	Albert A. A. Tuna	127 East 34th St.	2nd Wednesday	100 East 45th St.
Section No. 3	L. F. Luedecke			
Oneonta	B. B. St. John		3rd Thursday	
Rochester	Theo. Benz	278 State St.	Monthly	
Saratoga Springs	W. F. Camp	So. Glen Falls	2d and 4th Thursdays	Saratoga and Glens Falls
Syracuse	Fred P. Edinger	440 South Warren St.		
Schenectady	Mr. Spengler	McClellan St.	Subject to Call	
Tottenville	W. Taylor	Tottenville, S. I.	1st and 3rd Thursdays	St. George, S. I.
Troy	H. W. Boudey	First Street	1st Tuesday	Gas Office
Utica	W. C. Ballda	228 Genesee Street	1st Tuesday	Elks' Club
Yonkers	Mr. Mayer	Manor House Sq.	Monthly	
NORTH CAROLINA				
Charlottee	F. E. Robinson	205 N. Tryon St.	Tuesdays	Members' Offices
OHIO				
Akron	Harvey Uhl	211 Water Street	Alternate Thursdays	2nd Nat. Bank Bldg.
Bellaire	J. Blumberg	Bellaire	Call of Secretary	Bellaire
Canton	H. S. Hastings	Industrial Corporation	1st Tuesdays	Industrial Com.
Cincinnati	W. R. Keefer	939 E. McMillan	Tuesday 3 p. m.	Chamber of Com.
Cleveland	Frank Monahan	1761 East 12th Street	1st and 3rd Thursdays	Hotel Statler
Columbus	A. G. Sims	Sims Elec. Co.	2nd Wednesdays	Bldrs. Exchange
Dayton	Clarence Carey	1107 Bron Ave.	2d & 4th Mondays	Builders' Exchange
Masillon	F. D. Mussop	309 E. Main St.	Weekly	Members' Offices
Springfield	M. H. Gray		On Call	Various
Steubenville	D. C. Hartford		1st Wednesday	Nat. Exchange Bank
Toledo	J. Kelly	16 Huron Bldg.	Every Wednesday 8 p. m.	16 Huron Building
Youngstown	F. F. McBride	Builders' Exchange	Monday Noon	Y. M. C. A.
OKLAHOMA				
Tulsa	C. W. Cowan	Masonic Bldg.	Every Monday	Masonic Bldg.
OREGON				
Medford	S. C. Clark	Cal. Ore & Power Co.	3rd Monday	
PENNSYLVANIA				
Allentown	(See Bethlehem)			
Bethlehem	A. W. Hill	500 Main Street	Last Thursday	At call of President
Catasauqua	(See Bethlehem)			
Chester	Wm. J. MacMillan	12 W. 3d St.	2nd Thursdays	Chester Club
Dubois	C. E. Blakeslee		Monthly	
Easton	(See Bethlehem)		Monthly	
Erie	Earl Stokes	Builders' Exchange		
Lancaster	A. Deen	434 S. Sheppen	3rd Friday	Builders' Exchange
Philadelphia	M. G. Sellers	1518 Sansom St.	2nd Thursday	Underwriters Office
Pittsburgh	Fred Rebele	209 4th Avenue	1st Thursday	1716 Arch St.
Scranton	A. J. Fowler	Board of Trade Bldg.	Tuesdays	4th Avenue
St. Marys	C. E. Blakeslee	Dubois	Mondays	Zenke's
Wilkes-Barre	Ambrose Saricks	Penn. Pr. & Lt. Co.	Tuesday Evenings	Penn. Pr. and Lt. Co.
York	A. E. Harris	E. King Street	2d & 4th Tuesdays	
RHODE ISLAND				
Providence	Herbert C. Hill	35 Westminster Street	1st Thursdays	
SOUTH CAROLINA				
Charleston	J. P. Connolly	Cons. Ry. & Light'g Co.		
Columbia	E. L. Cashion	Sumter, S. C.		
Greenville	E. C. DeBruhl	Ideal Electric		
TENNESSEE				
Chattanooga	Carl Schnider	412 Kirby Avenue	Wednesday	Manhattan Cafe
Knoxville	H. M. Moses	615 Market Street	Noons	Railway Light Co.
Memphis	J. J. Brennan	Memphis Pow'r & Lt. Co.	Monthly	
Nashville	J. Shannon	8 Ave. and Church	1st Thursdays	Tribune Hotel
TEXAS				
Dallas	Miss B. E. Burkhart	Deer Building	On Call	Deer Buiding
El Paso	R. S. Murray	1515 No. Campbell	Ev. Tuesday	303 Martin Building
Beaumont	J. A. Solleder	866 Pearl Street	Tuesday Evenings	
Houston	E. M. Dupree	1303 Capital Ave.,	Wednesday Evenings	Houston Elec. Co. Bldg.
UTAH				
Salt Lake City	E. H. Eardley	Box 544	Tuesdays	Chamber of Commerce
VIRGINIA				
Lynchburg	Irby Hudson	Hudson-Morgan Elec. Co.	1st Thursdays	Piedmont Club
Norfolk	K. D. Briggs	Arcade Building	Wednesdays	Chamber of Commerce
Richmond	W. A. Cutlett	Jefferson and Grace Sts.		
WASHINGTON				
Seattle	Rush McCarger	3rd and Madison St.	Thursdays	Elk's Club
WISCONSIN				
Green Bay	John B. Tingley	223 Cherry St.	1st Thursday	Nicolet Building
Madison	Otto Harloff	602 State St.	Wednesdays	Asso. of Com.
Milwaukee	Walter F. Baumann	156 5th Street	1st Monday each Month	456 Broadway
Racine	F. H. Patrick	1545 W. Boulevard	1st Tuesday	Racine Building
CANADA				
Calgary	E. W. Beard		Bi-weekly	
Guelph	W. E. Lemon	The Gringer Co.	2d and 4th Monday	Christie Elec. Co.
Hamilton	K. J. Donoghue	c/o N. Electric Co.		
Kitchener	O. S. Leyes	c/o Doerr El. Co.		
Montreal	G. C. L. Brassart	65 McGill College Ave.		
Ottawa	A. C. McDonald	128 Osgoode St.	Monday 8:00 p. m.	Elec. Inspection Office
St. Catherine	A. J. Desand	Electric Shop	1st and 3rd Wednesday	Chamber Commerce
Toronto	J. A. McKay	24 Adelaide St.	2nd Tuesday	Board of Trade
Vancouver	J. F. Hutchinson	2427 Granville St.	Every Tuesday	314 Pacific Building
Windsor	A. H. Cook	609 Moy Ave.		
Winnipeg	R. N. Elgar	General Elec. Co.	2d and 4th Thursdays	Notre Dame Building
Niagara Peninsular	W. H. Mackenzie	609 Moy Ave., W.		

Greatest A. E. I. Convention Gets Under Way

As this issue reaches the hands of its readers the greatest convention in the history of the Association of Electragists—International, is in full swing at West Baden Springs, Ind. Though it is impossible at the present to give definite figures on attendance and other matters it is known that more electragists from all parts of the country have signified their intention to be present than in any other year.

Points as far distant from the convention place as California, Florida, Oregon, New England, Texas and Canada will be represented by good-sized delegations, for it has been recognized that this convention will attack problems which confront both the individual and the industry and local associations have shown a desire to cooperate with the national body in settling these questions.

Special trains were arranged for on the Saturday and Sunday preceding the convention, from New York, Chicago, Detroit, St. Louis and Cleveland and in some cases the demand for Pullman space has been so heavy that extra cars had to be added to these trains at the last minute. In addition many delegates from the Middle Western states had planned to go to West Baden by automobile.

The officers of the association have expressed gratification at the manner in which both members and the manufacturers who have exhibits at the convention have cooperated in promoting the gathering. A sticker advertising the place and date of the meeting was distributed literally by thousands on letters mailed out by members and by the manufacturers and the importance of this convention has been emphasized at all local and state meetings for the last several months.

The manufacturers' exhibit, incidentally, is the first that has been held under the auspices of the association since the 1905 convention at Boston. Signal success has been met with in obtaining the highest class of exhibits and those which will be of most value to the contractor-dealer in his business. Each exhibitor has announced his intention of showing the latest developments in wiring materials, electrical supplies and appliances.

The merchandising relation between contractor-dealer, jobber and manufacturer is the subject which makes this convention the most important to the industry as a whole and to every contractor-dealer whether he be a member of the association or not. One year ago at the Washington convention the matter came into prominence and a committee was formed to make an investigation and a report. The report, made three months ago, has aroused wide interest in all branches of the industry. The present convention by its action is expected to show the way for the rest of the industry and it is hoped that from its deliberations on the questions will ultimately come a settled and satisfactory merchandising policy for contractor-dealer, jobber and manufacturer. The entire business session of October 1 will be devoted to the subject of distribution and the discussion of this will be printed in detail in the next issue.

It is suggested by the association officers that all local and state associations which are represented at the convention adopt the plan which has been announced by the Iowa Association of Electragists, that of holding a special meeting immediately following the national convention. This will enable the delegates to report on the activities of the convention to those who were unable to go, while the matter is still fresh in their minds. The Iowa association will have two meetings, one for each division of the state.

Few changes of importance have been made in the tentative convention program announced in a recent issue.

Fred Adam Takes Office

At the inaugural meeting of the St. Louis Electrical Board of Trade on September 16 Fred B. Adam, the incoming president, took office. Mr. Adam is now concentrating his energies on his manufacturing business, the Frank Adam Electric Company, having disposed of his electric store earlier in the year and on September 1 his contracting business, which he had conducted for a great many years.

Rhode Island Co-operative Outing

Nearly three hundred men from all parts of Rhode Island, some from Boston, Worcester, Fall River and other New England cities gathered at the Warwick Club, Warwick, R. I. on Wednesday, August 20, for the annual cooperative outing of the Master Electrical Association and the Rhode Island Electrical League.

There were field and track games and a seven inning baseball game won by the contractors from the League by a score of 16 to 6. There was a lunch at 12:30 and a real Rhode Island shore dinner with clams and lobsters late in the afternoon. Fifty prizes were awarded at this dinner and at every chair was a bag containing nearly three dozen different articles donated as souvenirs of the occasion. Prizes were also awarded to the winners of all the athletic events.

H. A. Walker was chairman of the general committee, Frank G. Thurston, treasurer and H. E. Dawson, secretary. A. H. Allcott was chairman of the program and publicity committee, Herbert Ayers of the transportation committee, and Isaac Cooke of the sports committee.

Rhode Island's Electrical Men Keeping Their Eyes on the Photographer at the Annual Outing

Camp Co-operation IV Adopts National Confederation Plan

This year's symbol of co-operation within the industry, Camp Co-operation IV, at Association Island, N. Y., Sept. 2-6, broke all previous records for both individual attendance and number of electric leagues and other organizations represented. The individual attendance was 215 as compared with 182 last year and 136 the first year. Electric leagues represented totaled 51 and there were also nine other organizations which had representatives there.

The outstanding development of the meeting was the adoption of a plan for national confederation of electrical leagues for co-operative purposes.

The business program of the meeting was in charge of J. E. North, president of the Electric League of Cleveland, the outstanding subjects being the Red Seal plan to promote adequate electric wiring and the Lighting Educational Campaign.

The meetings were presided over in turn by James R. Strong, president of the Association of Electragists, International; E. E. Whitehorne, of the McGraw-Hill Company; J. Robert Crouse, director of the Society for Electrical Development; James E. Davidson, chairman of the Lighting Educational Committee and vice president of the N. E. L. A.

The business meetings opened on the evening of Tuesday, starting with discussion of league problems, including league service outside of the industry; contact with building permit holders, architects, builders, and realtors, and league service to contractors and dealers.

The outstanding subjects for the business sessions that followed included a morning discussion of the Red Seal Plan for promoting adequate wiring, the report of the league committee, and the presentation of the Articles of Confederation by Earl E. Whitehorne, chairman of the committee.

The leagues represented voted unanimously to accept in principle the report of Mr. Whitehorne, which outlines, first, the establishment of a league council, to be elected annually by the leagues, and to represent the leagues in their association with the Society for Electrical Development, and, second, to empower the council to make such arrangements with the society for the establishment of services as could be mutually worked out, the league council to report the results of such a conference back to the leagues for their acceptance as individual leagues. Representatives on the council were elected from thirteen districts.

Monterey Bay Meeting

Nearly one hundred electrical appliance dealers and their families recently attended a dinner and get-together meeting of the Monterey Bay Electrical Development League, held at Watsonville, Cal. A banquet at the Appleton Hotel was followed by a show at a local theatre and several addresses, principal of which was one by R. Griffin, special representative of the Northern States Gas and Electric Company. Delegations were present from King City, Salinas, Monterey, Pacific Grove, Carmel, Gilroy, Hollister, San Juan and Santa Cruz.

Toronto Membership Jumps Fifteen Percent

The half-yearly list of members of the Toronto Electric Service League was closed recently and showed that since the spring campaign for membership there has been an increase of fifteen percent in the number of firms holding membership. Nearly all the electrical firms located in the central business district of Toronto are now members of the league and plans are being made to include commercial wiring activities in its operations. One of the movements now on foot is to organize for a more effective tie-in between the league and the contractors.

Another step under contemplation is to create a list of personal members of the league at a nominal fee. There is a large number of electrical men in the territory covered by the league, who would like to join as personal members and take part in its work.

California State Association Now 100 Percent Electragist

The entire membership of the California State Association of Electrical Contractors and Dealers has joined the Association of Electragists—International, as the result of the recent trip of Secretary Laurence W. Davis to the Pacific Coast. The organization represents all of northern California and has a membership of approximately 250. Plans are under way under the direction of the new state secretary, Walter F. Price, to increase this number to well over 350 within the next few months through the system of offering the privilege of membership in the international as a part of state membership, to be paid for out of state association dues.

It is also intended to change the name of the organization to the "Association of Electragists of Northern California," and to license each of the cities whose local membership is 100 percent electragist to use the name of "Association of Electragists" of that city.

Some time ago the California association adopted an emblem of its own which it attempted to establish in the mind of the public. This was not effective, since the contractors in Southern California also have an emblem, which is of different design. It was recognized that such competition among local emblems would defeat the purpose of having an emblem. The Northern California electragists therefore will adopt the trademark and name "Electragist," thereby tieing in with the broader national movement to have a distinguishing mark of responsibility in electrical contracting.

Victor Lemoge, San Francisco, will remain as state president. He and Mr. Price presented the plan of joining the A. E. I. in a body at the state convention held at Santa Cruz, September 19-20, and it was ratified enthusiastically by the membership. Three representatives of the association, C. L. Chamblin, C. B. Kenney and Secretary Price, were appointed to attend the national convention at West Baden the first week in October. Mr. Price has been commissioned to make a close study of national work as applied to the field work for state organizations.

Southern California is not organized in a state association, although it has a strong local association in Los Angeles, which includes many A. E. I. members. There is also a growing organization of affiliated local associations in the towns outside of Los Angeles, under the name of the Electrical Safety Exchange. It is expected that ultimately these will join in one strong Southern California organization.

First Florida State Convention Endorses All-Metal Code

The first convention of the Florida Association of Electragists came to a successful conclusion at Tampa on August 18, after the members had endorsed a resolution favoring the all-metal code for the entire state of Florida. The association also promised co-operation in helping to put over the better home lighting campaign in Florida.

The meeting opened Tuesday morning at the Tampa Bay Casino with Chas. E. James, Fort Pierce, acting as chairman.

Mr. James then gave a short talk on what the association is trying to do, and explained the workings of the executive committee and some of its recent decisions. He announced that there would be four meetings a year, held at the following places; the first meeting (annual meeting) at Orlando in February; the second meeting at Jacksonville in May; the third meeting at Tampa in August; the fourth meeting at Miami in November. He explained that it was not the purpose of the association to try to get every member at every meeting but to hold the meetings in the four different sections of the State so as to get all the members of each section to at least one meeting in a year.

Discussion was then opened on the "All Metal State." E. W. Lawson of West Palm Beach, W. M. Harley of Fort Myers, S. C. Reddich of Jacksonville, M. F. Hunter of Tampa, H. F. Thompson of Daytona, George Van Deusen of Daytona, J. J. Newell of Orlando, R. A. Parker of Braden Town, and J. C. Burke of Tampa expressed their views on this question and the following motion was made and duly seconded: That the Tampa meeting of the Florida Association of Electragists go on record as strongly favoring an "All Metal State." This motion was unanimously carried.

The question of a "Uniform Inspection Law" for the State was then opened for discussion. After discussion it was moved and carried that a "Uniform Inspection Law" be favored and that the executive committee act in the best possible manner to obtain it.

The matter of taking the electrical contract out of the general contractor's hands and placing it with the owner or architect was then taken up. After the discussion it was moved and carried that the Executive Committee take up with the Florida Association of Architects the question of taking the electrical contract out of the general contractor's hands and putting it into the hands of the owner or architect, and that the association go on record as being heartily in favor of all sub-contractors being given independent consideration.

Contractors Now Collecting for Denver Central Station

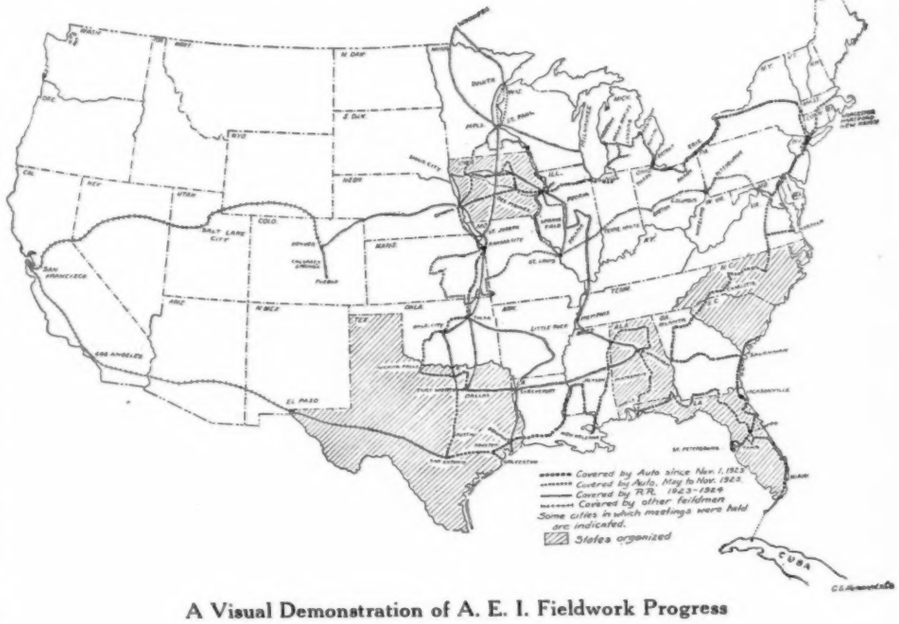
The plan whereby reliable contractor-dealers of Denver can serve as neighborhood collection agents for the Public Service Company of Denver went into effect Sept. 1. On that date customers' service bills listed the names of 16 contractor-dealers who were authorized to accept payment of service charges for the company. The operation of the plan has been confined to contractor-dealer members in good standing of the Electrical Co-operative League of Denver, which sponsored the system in conjunction with the central station. It is believed that the convenience of paying bills at the neighborhood electrical store will bring in many potential customers for electrical goods who otherwise would either not purchase electrical appliances at all or would do so through the central station, thus depriving the dealer of business.

Appointed A.E.I. Contact Man

Samuel Adams Chase, special representative of the Westinghouse Electric and Manufacturing Company, has been appointed by his company contact-man with the Association of Electragists in both its national and local efforts. Through his long association with contractors' organization work Mr. Chase expects to be able in his new responsibility to be of considerable assistance to local electragist organizations.

A. E. I. Fieldmen Cover Vast Territory

A glance at the map below will give an idea of the enormous territory covered by fieldmen of the Association of Electragists—International, in the course of a year. In that time six states have been organized into strong electragist bodies and many local associations have been formed. Cities in twenty-seven states have been visited by Arthur P. Peterson, A. E. I., fieldman, since May 1923, partly by automobile and partly by train. In each city meetings were held and the objects of the association work and the advantages of membership in it were explained. The map was prepared by Mr. Peterson on his recent visit to the national headquarters.


Covered by Auto since Nov. 1, 1923
Covered by Auto, May to Nov. 1923.
Covered by R.R. 1923-1924
Covered by other fieldmen
Some cities in which meetings were held are indicated.
States organized
CUBA

A Visual Demonstration of A. E. I. Fieldwork Progress

Christmas Sales Aids in Preparation

Unusually effective and appropriate sales aids for this year's "Give something electrical" Christmas campaign will be available to dealers within a short time, according to the announcement of national organizations which provide material for this purpose. These organizations and the manufacturers have been studying the industry's requirements during the past several months and have arranged to supply electrical retailers with material which will assist them in harvesting a bumper crop of business this Christmas season.

The Society for Electrical Development will have a wide assortment of Christmas Campaign selling helps and it is the intention this year to produce a number of standard packages, which will be supplied at cost. These packages will consist, for example, of a 6 color Window Display Background Panel, 37 in. by 60 in., carrying the slogan, "Give Something Electrical"; a set of nine Santa Claus cut-outs (in colors); Christmas poster stamps (in four colors); wreaths and booklets or folders. Standard packages of the value of $10.00 and $12.50 containing assortments of the above and others containing only Christmas background display panels and Santa Claus cutouts will be available.

Broadsides giving complete information on this material will be forwarded to the industry the latter part of October so that orders can be placed in plenty of time to permit its use.

Fan Contest Arouses Interest

The electric fan prize contest being conducted by the Society for Electrical Development has met with a good response among fan dealers and their salesmen, according to a statement issued by the society. A number of sales plans on how to sell fans for diversified uses has been received. In connection with this the society has been distributing at cost an issue of "Sales Helps" containing merchandising suggestions for off-season fan selling.

The contest closes October 15. The prizes which total $250 and are divided into a $100 first prize, a $50 second prize and ten prizes of $10 each, will be awarded December 1. The rules for the contest are announced in another part of this issue.

This Poster is the Opening Gun in the Industry's Christmas Campaign

A. E. I. Executive Committeemen to be Nominated

As the preliminary step toward the annual election of executive committeemen of the Association of Electragists, International, Laurence W. Davis, secretary, will mail out to members during the first week in October a nomination notice showing the name of the executive committeeman in the member's district, together with a form for recording the member's nomination.

These forms are to be returned to the secretary on or before November 1, with the name of the nominee for the office to be filled, entered thereon but without signature. Though membership in the association is by persons, firms or corporations, nominations must be of individuals. The nomination ballots should be enclosed in an envelope provided by the secretary, which shall be forwarded in an outer envelope bearing the sender's name and address.

During the first week in November the secretary, in the presence of two members of the association, will canvass the nominations and mail to each member in each division a ballot form containing the names of the two nominees receiving the highest number of nomination ballots. The ballots must be returned to the secretary on or before December 10 with the member's vote for the office recorded on it. The same provisions for forwarding the ballot are made as for the nomination form.

The present executive committeemen are: Eastern Division, W. Creighton Peet; Southern Division, J. A. Fowler; Eastern Canadian Division, R. A. L. Gray; Great Lakes Division, L. G. Ross; Central Division, A. Penn Denton; Western Canadian Division, C. C. Carter; Pacific Division, C. L. Chamblin; Mountain Division, E. C. Headrick.

Contracting Firm Builds Own Electric Home

The electric home idea has progressed so far since the days when it was hard even to persuade organizations of electrical men to contribute to the support of such a project, that there are now many examples of electric homes which have been financed and constructed by individual electrical contractors. One of the latest of these is the electric home built by William F. and Harold A. Balcom, electrical contractors of Malden, Mass. The firm was connected with similar homes in Newton and Salem, Mass., but this house, unlike the others, is their personal project.

The lighting fixtures of the house are of cast brass and the switch plates, the same material with silver finish. There is a switch outside to light the outside lights and on the steps is a glass plate bearing the number of the house which may be illuminated.

In the living room over the fireplace is a plug for an electric clock, while in the kitchen is an electric washer and wringer; in the pantry there is an electric refrigerator and a motor for polishing and also one for sharpening knives.

There are 18 separate circuits in the house.

On the second floor are plugs to disconnect the telephone down stairs and reconnect it again in any of the upstairs rooms. In the bathroom may be found two electric heaters.

Lehigh Valley Association Incorporates

The Lehigh Valley Electrical Association, including in its membership electrical contractor-dealers in Easton, Bethlehem, Allentown and Catasauqua, Pa., and Phillipsburg, N. J., has recently received its incorporation papers. The association has been in existence some years and applied to the state for incorporation papers early this spring.

The members of the association met on the evening of September 15, to hear a talk on "Managing the Electrical Contracting and Dealing Business for a Profit," delivered by Arthur P. Peterson, A. E. I., field representative. Mr. Peterson also emphasized the activity of the national association in promoting correct relations between the contractor-dealer and the industry as a whole. Talks were made also by R. W. Keck and R. J. Morrison, both of whom commented on the value of the service rendered by the A. E. I. to its members. Arthur W. Hill was selected as the organization's representative at the annual convention at West Baden.

It was announced that the association plans an intensive drive to familiarize the public with the name "Electragist."

Twenty Years Ago

Twenty years ago two events of importance were held in St. Louis. One of them was the St. Louis World's Fair. The other was the fourth convention of the organization known then as the National Association of Electrical Contractors and Dealers and now as the Association of Electragists—International. These events were recalled by the receipt of a note, enclosing the 1904 convention badge, from Charles J. Sutter, one of the original electragists of St. Louis, a faithful attendant of electragists' conventions ever since the first in 1901.

"I found the picture of the St. Louis gathering most interesting," writes Mr. Sutter. "All the old standbys were in evidence, some still in existence and leading the organization, others passed out of sight or deceased. Time has wrought a lot of changes in both appearances and styles, though the years seem to have been lenient to most. Some of the association's Beau Brummels can see themselves (if they will drop into my office and take a look at the picture which was shot with the Federal Building as a background) arrayed in Fashion's latest. There were many derbies, a few soft felt hats and scarcely any straw hats.

"Some of those on the photo I recognize as Charles Eidlitz, the late Marshall Barnes, Mr. Gray of Minneapolis, Mr. Stearns of Buffalo who was sergeant at arms of the national association, E. McCleary, G. Sanborn, John Galloway, Sol Davis, Alex Henderson, W. H. Morton, Fred Newbery, Frank Adam and William Corrao and many others. The twenty-fourth convention will be a lot bigger than the fourth but it won't be any more lively.

Birmingham to Do Co-operative Advertising

The local Association of Electragists in Birmingham, Ala., has passed a resolution providing for co-operative advertising of the electrical idea and plans are now being worked out for putting such a campaign into operation. It is the intention of the association, according to J. R. Wilcox, secretary, to feature strongly the slogan, "Patronize Electragists," and to sell the public the idea of going to a member of the association, for safe, reliable work.

In addition to this activity, Birmingham electrical men have organized for carrying on the local Home Lighting Contest. The advertising appropriation for this totals $5,500. An electrical home also has been constructed at a cost, excluding that of the land, of $20,000. Three thousand dollars will be spent on newspaper advertising of the home.

Lighting Code for School Buildings

With the approval of the Code of Lighting School Buildings as an American Standard by the American Engineering Standards Committee, a demand for definite, detailed and up-to-date specifications for lighting school buildings, on the part of the architects of school buildings, school superintendents and school boards, and regulatory bodies has been met.

The present code is the result of a thorough revision of the code prepared and issued in 1918 by the Illuminating Engineering Society. A number of changes and improvements in lighting practice itself, since the 1918 code was issued, have made necessary its revision to conform with the best modern practice.

The new code differs chiefly from the old in being more specific. The illumination standards have been raised to conform with modern practice; specifications of definite requirements under the glare rule have been included; a limiting ratio of maximum intensity to minimum intensity in class rooms has been included in the rule relating to distribution of artificial light; reflection-factors have been specified in the rule relating to color and finish of interior; the rule relating to exit and emergency lighting has been emplified and a rule relating to the illumination of blackboards has been added.

The rules themselves occupy less than four pages and are followed by a non-technical discussion.

Secretary Davis Returns from Coast

Four cities were visited by Laurence W. Davis, secretary of the A. E. I., on his return from his trip to the Pacific Coast during August. His first stop was made at Salt Lake City, where he attended three meetings of electrical men. One of these was the big annual field day of the Rocky Mountain Electrical League at Farmington. On the following day he addressed a special luncheon meeting of Salt Lake City electragists, held at the Elks Club. The meeting lasted through the afternoon and developed into a forum for discussion of local work, particularly the enforcement of the local licensing and inspection ordinances to raise the standard of wiring. It was also considered what steps might be taken to stop losses suffered by the Salt Lake City public recently through the activities of irresponsible contractors.

The next day saw a joint meeting where Mr. Davis joined in with both jobbers and electragists in discussing the possibilities of protection for responsible contractors through the tightening of credits by jobbers and a study of the problems brought out by the report of the Merchandising Policy Committee of the A. E. I.

From Salt Lake City he went to Denver, where a large dinner meeting was held, attended by over 100 electrical men of that city. Two meetings held in Kansas City were addressed by Mr. Davis. One was a joint meeting of jobbers and contractors and the other, at which he discussed the problems of business management and overhead, was attended by contractor-dealers.

De Veau Has Varied Lines

A. S. De Veau, so well known to the contractors as to need no further introduction, is conducting his business as manufacturers' representative at 53 Park Place, New York City, and now represents the Ajax Electrical Specialty Company, makers of plugs, portable lamps and radio accessories; C. & P. Electric Works, makers of barrier panels, exit signs, outlet box covers and steel boxes; Dryden Rubber Company, producers of friction and rubber tape; William J. Murdock Company, manufacturers of "Neutrodyne" receivers, headphones, multiple plug-jacks and multiple jacks; J. T. Pearson, makers of "End-O-Lets"; Peerless Electric Products Company, makers of electrical fittings and fixture hangers; Interstate Electric Company, handy charger manufacturers.

OBITUARIES

William M. Tenney

William M. Tenney, president of the Clifton Manufacturing Company, Boston, and for many years prominent in the electrical manufacturing industry, died August 27 at his home at Wellesley Hills, Mass. When a young man Mr. Tenney was with Jay Cook & Company, bankers, and later on became cashier of the Security National Bank in Minneapolis. He first entered the electrical field in 1902 when he became identified with the Clifton company. He served as its president up to the time of his death. David D. Tenney, a son, is president of the Tenney Company of Minneapolis and Frank C. Tenney, another son, is also with that company.

Max Herskovitz

Max Herskovitz, founder and president of the Peerless Light Company of Chicago, died August 10 in Chicago, after an operation for appendicitis. Mr. Herskovitz was fifty-three years old. He came to this country at the age of fourteen with his sister, and after a hard struggle for a number of years, he was placed in charge of the crockery department of what was then known as the West End Store, located at the corner of Madison and Peoria streets, Chicago, and it was here that he became interested in gas mantles, and lighting problems. In 1901 he organized the Peerless Light Company with a small capital. His two brothers, William, vice president, located in Chicago, and Abe, secretary and treasurer, located in New York City, will conduct the business of the Peerless Light Company.

News Notes Concerning Electrical Contractor-Dealers

Business Changes, Store Improvements, and New Establishments Opened

A. H. Moser and C. J. Chubb have purchased the Apex Electrical Company at 208 West Sixth Avenue, Topeka, Kan., and will operate it under the name of Moser & Chubb Electrical Appliance Company.

The Electric Sales Company, Columbus, Ohio, are planning to move in the near future from 41 North Wall street to the northwest corner of Long and Front streets.

Albert J. Hoak and Victor Spoth have leased a store in Williamsville, N. Y., and will open an electric shop.

The fourteenth store of the Service Appliance Company, a concern operating a chain of retail electrical goods stores, has been opened at Herkimer, N. Y. The Herkimer store will be under the supervision of F. H. Ives, of Gloversville, and under the direct management of M. G. Pfaffenback.

A. J. Sneck will move his electrical store from its present location to a new building on River Street, Fort Plain, N. Y., where he will have double the amount of space for display and sales purposes.

The Mesilla Valley Electrical Company is completing its new building at Main and Lea streets, Las Cruces, N. M., and plans to use a large part of it as a demonstration plant.

A new electrical contracting and appliance business has been opened in Elkhart, Wis., under the name of the Elkhart Electric Company, by F. F. Zeh and A. P. Kissinger. Mr. Zeh is a graduate of the Electrical School of Engineering at Milwaukee.

The Zenith Electric Shop at Eveleth, Minn., has been purchased by J. E. Irwin. Mr. Irwin for the past two years has been in the sales department of the Duluth Electrical Supplies Company.

The Manhattan Electrical Bargain House has taken a ten-year lease on a store at 105-7 Fulton street, New York City.

C. C. Miller & Company, Oneonta, N. Y., have purchased the Lane Electric Shop of that city, and will add the large stock of fixtures and supplies to their own stock. Only the fixtures and supplies were included in the sale, the building remaining the property of J. Barton Lane.

Warren B. Sharp, electrical contractor, Asbury Park, N. J., will move his establishment from the Todd building to a new store on Arnold avenue.

The Electric Shop, dealing in electrical supplies and radio, has been opened at Fifth avenue and Pine street, Pine Bluff, Ark.

Irving A. Brody, who recently sold out his interest in the Brody Electrical Company, Inc., of Union Hill, N. J., has opened a new electric store, in partnership with William A. Cohen, at North Adams, Mass.

L. L. Busse, electrical dealer of Lawrenceville, Ill., has established a branch store at Hutsonville, Ill.

Warren Law, electrical dealer, 1203 Elm street, Dallas, Tex., has made extensive additions and alterations in his store, the store now running through from Elm street to Pacific street, the next thoroughfare to the east.

The Clear Lake Electrical Shop, Lakeport, Cal., has been purchased from Sid Keller by Burt Thurston, who will run it in connection with his shop at Ukiah, Cal.

Androphy Brothers have closed their store at Derby, Conn., and will devote all their time to their appliance store at Ansonia, Conn.

J. H. Brock, of the Brock-Anderson Electrical Engineering Company, Lexington, Ky., has bought out the interest of his partner, R. E. Anderson, and has also purchased the electrical business of the Frazier-Morrell Company of that city.

•MANUFACTURING•

A Department Devoted to the Latest Devices Used by the Electrical Contractor and Dealer

Safety Switches

"Bull Dog" safety switches in a new "luminized" finish are shown at the A. E. I. convention by the Mutual Electric & Machine Company, Detroit. The new finish is given by an aluminum deposit process which gives the metal rust-resisting qualities, heat-resisting qualities, resistance to ordinary acid fumes, good electrical ground and reflects light instead of absorbing it, which gives the switch greater luminosity in dark and dim places. The finish can be restored without trouble if it is marred, according to company tests.

"Hotpoint" Appliances

A number of new heating appliances brought out by the Edison Electric Appliance Company, Inc., Chicago, feature the company's exhibit at the A. E. I. convention at West Baden. One of the appliances, a table cooker, is pictured below. The cooker consists of a six inch stove, controlled by a three-heat snap switch with indicating handle. The

utensils include a five-quart aluminum kettle, a steam rack, a clover leaf set of aluminum utensils, an aluminum cake or pudding pan, an aluminum pie pan and a baking rack.

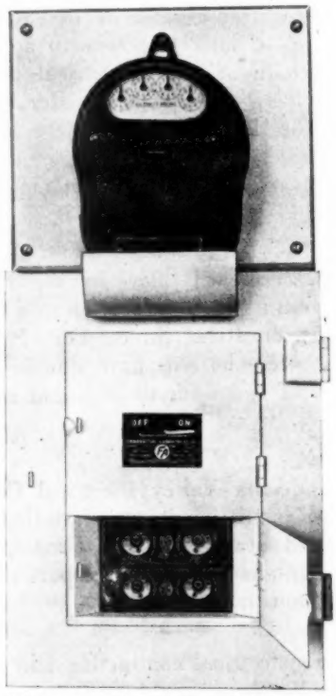
A marcel iron has a waver rod ½ inch in diameter, is fitted with standard removable swivel plug to prevent cord snarling and is furnished in 32, 110, 220 and 440 volts.

A soldering iron is for handy household use or auto soldering jobs. It has a copper chisel tip with a sheath-wire element.

Other items include a new low-priced heater, an unusually ornamental waffle iron, a large sugar and creamer set, a table stove with dishes, a newly-designed "Dolly Madison" percolator set, a "toastover" toaster, a curling iron finished in ivory and French gray and a duplex grill.

Frank Adam Products

A new type combination all master major pilot and remote control board which permits of an unlimited number of set-ups is one of the exhibits made at the A. E. I. convention by the Frank Adam Electric Company, St. Louis. The company also has on display a new flush type entrance switch and cut-out cabinet, which is illustrated here.



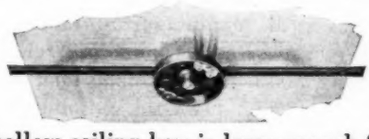
In addition to these the exhibit includes a new type fan hanger outlet.

Bakelite Flush Plates

Bakelite flush plates, in a dull black finish, are among the new materials displayed at the West Baden convention by the General Electric Company. The plates will not stain, tarnish or corrode and have been designed to blend with the exposed compound on convenience outlets and tumbler switches. They are durable and dent-proof and harmonize with practically every scheme of interior decoration. The exhibit also includes the new "G-E" flush "Pony" tumbler switches and convenience outlets.

Set-up Box

Among the exhibits of the Chicago Fuse Manufacturing Company at the A. E. I. convention is its new "Union" set-up box, completely assembled for installation. The bar on this box is completely rigid, and is made from ½x3/16 in. round edged steel and is 17½ in. long. The loom box has eight knock-outs, all easily accessible. The 3½-in.



shallow ceiling box is large enough for any ceiling outlet. Two loom clamps are provided with each box and the bar clamp is fastened to the box through the stud by a special screw. By tightening the screw the clamp grips the bar positively and at the same time draws the box snugly to the bar.

Appleton Fittings

The exhibit of the Appleton Electric Company, Chicago, at the A. E. I. convention shows four products recently developed by the company. One is a laundry fitting which is pictured here.

This is for use in the laundries of apartment buildings which are not properly wired and permits the use of laundry appliances. It provides a branch circuit from the meter which can be locked

when not in use to prevent the theft of current. These fittings are furnished in single gang, in sectional style which permits of removing sides and they can be built into any number of gangs necessary.

There is also an entrance fitting designed in response to the demand for a service ell which will permit installation close to the building. The fitting is weatherproof. The cover is held in place by a flange and securely fastened by means of one screw. The company also is marketing an octagonal outlet box 4 in. in diameter, 1½ in. deep with four ½-in. knockouts and eight loom knockouts in side, as well as three ½-in. knockouts and six loom knockouts in bottom. Another new Appleton product is a 3½-in. round shallow loom box with stud in center.

Outdoor Sign

An outdoor sign, a sales promotion device made by the Westinghouse Electric & Manufacturing Company, is on display for the first time at the West Baden convention. The exhibit features also the new Westinghouse sprayed color lamps designed for general decorative schemes and which can be used both indoors and out, the weather not affecting brilliancy or color. The company displays in addition a lamp demonstrator for counter use.

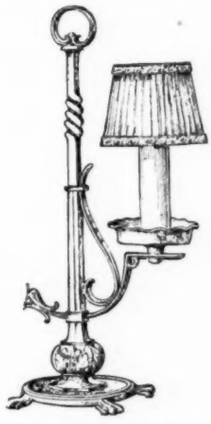
Plug Fuse

The Economy Fuse and Manufacturing Company, Chicago, is exhibiting at the A. E. I. convention a new non-renewable fuse plug, under the trade name "Clearsite." The fuse uses the "Drop-out" link to reduce internal operation pressure and it is mounted with the

operative section of the element immediately under the window. It has two additional restricted sections deep within the body and at right angles to the visible section. The window is held in a metal eyelet and is inserted in the interior of the body, being spun permanently into place. The fuse body is made of heat-resisting black molded insulation. The top of the body is slightly smaller than the ordinary fuse and is fluted on the circumference, providing a grip for insertion or removal. Only insulation is exposed, thus preventing any accidental electrical contact. The fuses are boxed conveniently for retail trade.

Novelty Lamp

An attractive lamp, combining utility with unusual design, has been put on the market by the Miller Company, Meriden, Conn. The lamp is 15 inches high, the metal parts being of dark verde and copper antique hammered



gold. Six feet of cord are provided. The lamp is appropriate for mantlepieces, bookcases, side-boards, buffets, dressers, boudoir tables and many other places where some particularly decorative means of supplying illumination is wanted. The company also makes this same design in a lamp 11 inches high.

Conduit Fitting

The "End-O-Let" conduit fitting has recently been placed on the market, the manufacturer being represented by J. T. Pearson Company, Dime Bank Building, Detroit. No covers are required for this fitting, breakage therefore being eliminated. It is small, being approximately the size of a bushing, so that conduit offsetting is not necessary. The device is made of a special six-thread malleable bushing and a composition insulator with three holes through it to admit and separate conductors. It is made in ½-in. to 4-in. sizes.

Sewing Machine Light

A sewing machine lighting fixture has been brought out by the O. C. White Company, Worcester, Mass. It is adjustable and detachable and will clamp on any standard sewing machine, as well as possessing another good feature in its use of standard lamps.

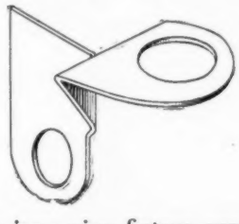
Single and Duplex Receptacles

The Bryant Electric Company, Bridgeport, Conn., has redesigned its No. 760 and 762 single and duplex composition body flush receptacles with side wiring terminals. The contact clips are of the return bend construction to insure good contact and a firm grip on the prongs

of the cap. The brass binding terminals have been increased in thickness giving more threads to hold the binding screws and preventing bending or distortion when wiring. These receptacles are designed for as easy wiring as can be accomplished on side wired receptacles and, at the same time, sufficient composition extends above the plane of the terminals so that the receptacles will meet the requirements of the inspectors in certain localities who insist that terminals be recessed in the insulating material so that the lock nuts of armored flexible conductor cannot touch the terminals of the receptacle when the device is installed in the box.

Chain Switch Mounting

An attachment for mounting an individual pull chain switch within the fixture canopy "upon the main support of the fixture," as required by code, has recently been perfected by the F. W. Wakefield Brass Company, Vermilion, O. The mounting consists of a piece of sheet metal of sufficient gauge, stamped to form. It is perforated with two holes of proper size so that it slips



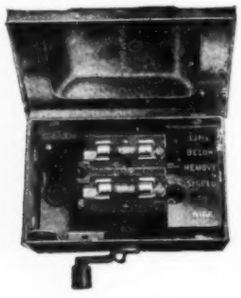
over the iron pipe fixture support and is held firmly between the pipe casing and the hickey. The shape of the stamping permits the switch to be mounted in any of four different positions, so that it meets practically any condition. Patents have been applied for on the device.

The use of this mounting removes all strain from the slip ring screw and prevents loosening of the switch.

The company is supplying this mounting as an accessory with all its chain pendant type hangers.

Small Safety Switch

A new small size safety switch has been added to the line of the Trumbull Electric Manufacturing Company, Plainville, Conn. The switch is built very



compactly primarily for use with small motors. It is a full safety device, positive make and quick break, the shield covering all live parts and fuses being easily accessible and dead as soon as the cover is open. Another feature is a reversible fuse block. This can be turned around so that lines can be run either top or bottom. The switch is regularly equipped for line and load at the top, but if the wireman when installing the switch finds bottom connections he merely has to remove two fastening screws and the binding screws and turn the block around. The fusible switch becomes no fuse by removing shield and fuse block so that it can be used as either upon a moments notice. The switch is being made in 2-3 pole, 30-amp., 250-v., fusible and no fuse.

Pendent Switch and Receptacle

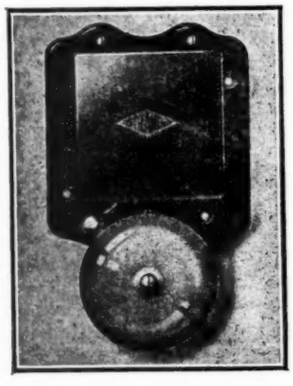
A new combination pendent switch and receptacle, made by the Cutler-Hammer Manufacturing Company, Milwaukee, is now being distributed under the catalogue number 7053. This device is arranged to control the lighting unit and at the same time take any appliance. The two features are independent of each other, the receptacle being directly connected, so that whether the light switch is on or off, any appliance may be plugged in and operated. It is adapted for use with kitchen lighting units as well as for controlling commercial and industrial lighting units.

Switch Plug

A new switch plug, suited especially for kitchen lighting units and which may be adapted for other uses, is announced by Harvey Hubbell, Inc., Bridgeport, Conn. The device combines a pendent push button switch and a convenience outlet. The switch controls the light only, the convenience outlet being always "alive." The T-slots of the outlet provide for the attachment of any electric appliance such as an iron, toaster, percolator or vacuum cleaner.

One-Watt Bell

W. R. Ostrander & Company, 371 Broadway, New York City, have recently developed a transformer bell for school class rooms, mines, explosive vapor rooms, etc. It has no contacts to cause sparking or failure due to wearing out and is economical in power consumption so that a large number can be rung at one time without requiring excessive current arcing of control and eliminating great line voltage drop.



The new one-watt efficiency bell consists of a special laminated core, with thoroughly-insulated coils connected directly to terminal block of Bakelite, no interruptor being used.

A cast brass gong top is used to obtain volume and is finished in standard statuary bronze. The standard voltage is 12 volts.

This bell is also recommended by the company for use in connection with call systems, vibrating bell code ringing, annunciators, burglar alarm, and where there is high humidity, as well as in explosive vapor rooms.

Receptacles

The Besco Electrical Manufacturing Company, 260 Stone Avenue, Brooklyn, has added to its line of wiring devices a two-piece porcelain sign receptacle and a composition flush receptacle. The edge of the ring of the sign receptacle is deeply corrugated to furnish a firm grip on it to screw the ring tightly into place. It is finished with or without leads.

The flush receptacle is provided with slots for accommodating tandem or parallel. The contacts and terminals are punched of one piece of heavy phosphor bronze metal. The device is adaptable for thin partitions, measuring 15/16 inch deep.

Condensed Notes of Interest to the Trade

The Triangle Conduit Company, formerly at 50-54 Columbia Heights, Brooklyn, has moved its general office and factory to Dry Harbor road and Cooper avenue, Brooklyn. The new plant also includes the recently-opened rubber-covered wire mill. There has been no change in the address of the Chicago factory of the company.

The Gertler Electric Company, Inc., New York City, has opened a wholesale branch in Westchester County, with full facilities for furnishing contractors free delivery of materials purchased. The company announces that its policy at this branch is "wholesale only" and that all consumer business will be turned over to its dealers.

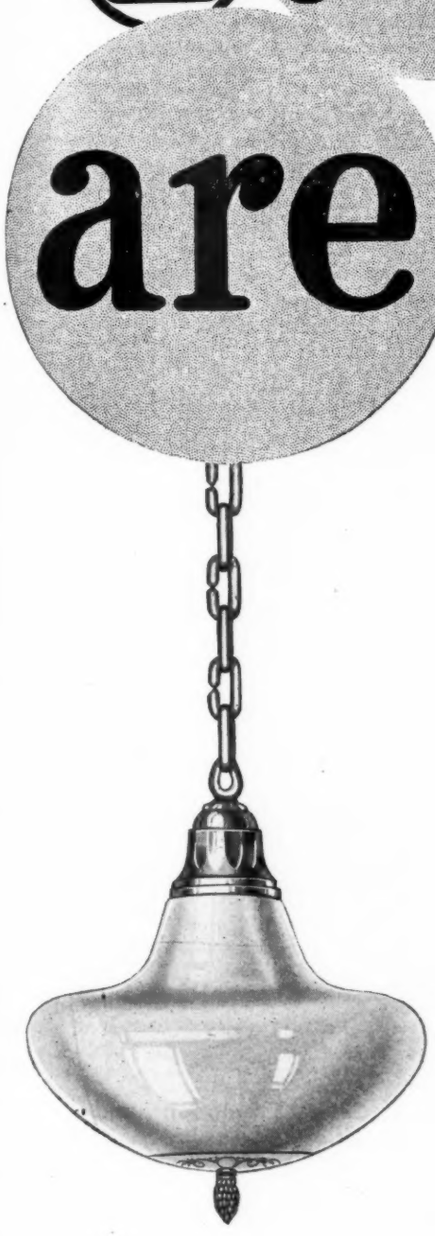
A wide national advertising campaign, tied in with sales helps for the radio dealer, has been launched by C. Brandes, Inc., radio manufacturers, New York City. The advertising is based on the company's guarantee of money back unless the purchaser is completely satisfied. The dealer helps include counter and window display cutouts, booklets for counter use and a booklet containing merchandising information on radio selling.

A new and simplified catalogue has been gotten out by the Columbia Metal Box Company, New York City, to describe its complete line of safety switches. The price schedules are not complicated and the catalogue also contains a dealer discount sheet.

The G. F. Mitchell & Sons Company, Cleveland, after three years of operation in limited territory, is organizing its sales force for national distribution. The company has appointed William Campbell director of sales.

The Independent Electrical Supply Company, New York City, has just issued its new catalogue.

are you with us?



WE are in the midst of an intensive direct-mail campaign designed to interest every architect, commercial establishment, and industrial plant in better lighting. Intensive and compelling letters, broadsides, and circulars are doing effective work.

A few weeks and the campaign will be over. Then it will be your job to carry on by selling Westinghouse better lighting equipment to this large new market.

Prepare now for a busy season.

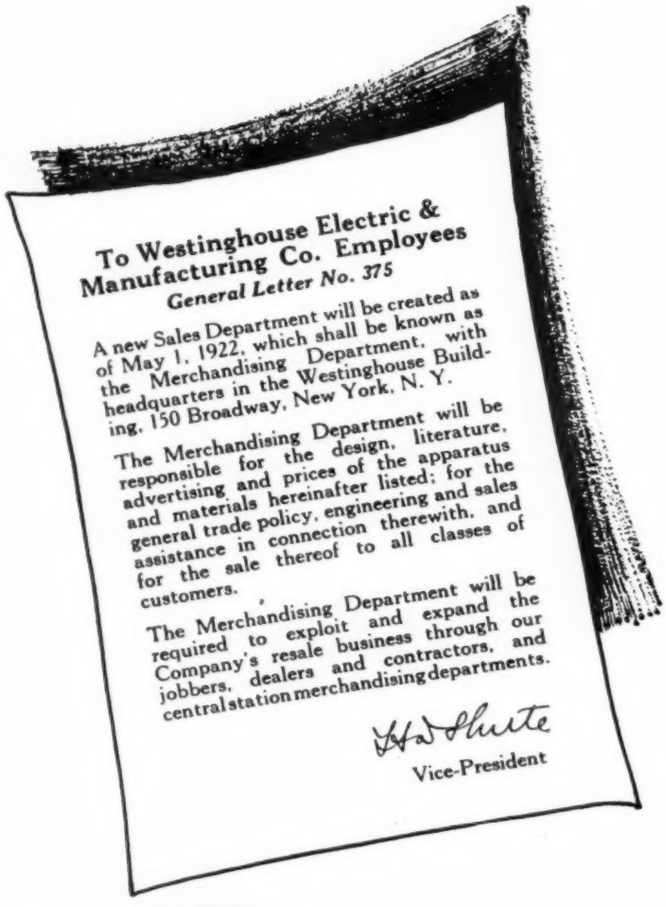
Write for detailed information regarding this campaign, and let us help you sell Westinghouse better lighting equipment to every prospect in your territory.

Westinghouse Electric & Manufacturing Company
South Bend Works South Bend, Ind.
Sales Offices in All Principal Cities of
the United States and Foreign Countries

Westinghouse

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

A Message for Every



To Westinghouse Electric & Manufacturing Co. Employees

General Letter No. 375

A new Sales Department will be created as of May 1, 1922, which shall be known as the Merchandising Department, with headquarters in the Westinghouse Building, 150 Broadway, New York, N. Y.

The Merchandising Department will be responsible for the design, literature, advertising and prices of the apparatus and materials hereinafter listed; for the general trade policy, engineering and sales assistance in connection therewith, and for the sale thereof to all classes of customers.

The Merchandising Department will be required to exploit and expand the Company's resale business through our jobbers, dealers and contractors, and central station merchandising departments.

H. H. Schutte

Vice-President

This letter, issued two years ago, inaugurated the Westinghouse Electric Merchandising Department.

The creation of this department brought under one control the Engineering, Production and Sales activities on merchandising lines, thus placing the company in a position better to serve electrical dealers, merchandising departments of central stations and other legitimate electrical retail outlets.

The following lines are included in this service:

- Domestic Heating Appliances and Ranges
- Industrial and Commercial Lighting Fixtures
- Rectifiers
- Fans
- Safety Switches and Motor Starters
- Fuses
- Friction Tape
- Bell Ringers
- Panelboards
- Small Light and Power Plants
- Small Motors and Portable Power Stands

Local Merchandising Manager

In each one of the Westinghouse District Offices a Merchandising Manager devotes his time and thought to our mutual problems and directs his energies toward affording you complete service.

Local Sales Promotion and Advertising Man

Closely associated with each local Merchandising Manager a well qualified advertising expert is continually engaged in laying out campaigns, advertisements, preparing circular letters, window displays and other sales promotion helps. His services are yours for the asking.

W Westinghouse Lamps.

Merchandising Department

Westinghouse Electric & Manufacturing Co.

150 Broadway, New York, N. Y.

Man Who Merchandises Electrical Goods

THIS fragment of electrical retail selling history has never before appeared in print—outside of Westinghouse files.

That is perhaps our own fault—for every retail merchant should know every word of it.

This announcement is for that very purpose—to register with you the aims and aids that are working for your interest.

Ever since you entered the electrical business—you have been face to face with Westinghouse engineering achievements.

Ever since the public was acquainted with electricity—it has been face to face with Westinghouse engineering achievements.

The electrical merchant may now turn this general interest into sales.

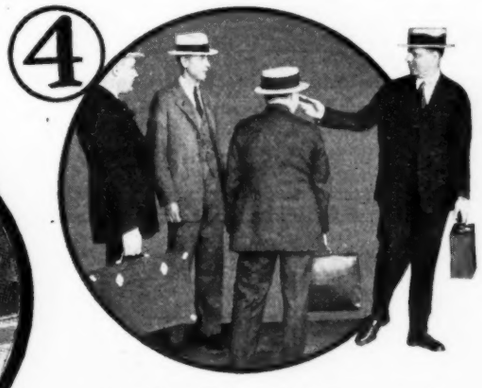
To help him transform interest into sales is the work of the Merchandising department of Westinghouse.

Outstanding Westinghouse developments such as the electric lamp—the fan—the iron—right up to the Westinghouse conception of the automatic electric range—have made the nucleus of a profitable retail volume for the electrical dealer.

So the formation of a Merchandising Department as a separate division of this great industrial organization was another logical development.

The Westinghouse Jobber

The policy of the Merchandising Department is to sell through the electrical jobber in order to serve you better. One of the more than half a hundred Westinghouse jobbers is in your territory, prepared to give you real service on Westinghouse lines. His salesmen visit your town at regular intervals and are always interested in your problems.



Merchandising Salesmen and Specialists

Operating out of each local office, well equipped Merchandising representatives not only sell Westinghouse lines, but also familiarize themselves with the dealers problems and offer assistance in their solution. Frequently they help in actual selling over the counter. On certain technical lines such as interior lighting, safety switches, panelboards and ranges the services of specialists are avilable.

Service and Shipping Facilities

Each District Office has a well equipped service shop for making repairs, and spacious warehouses with ample stocks act as reservoirs on which the jobbers can freely draw.

This is the first of a series of talks by the Merchandising Department to show what it is doing to help the electrical retailer.

Other articles dealing with its policies and sales promotion efforts for the dealer will appear in subsequent issues.

Merchandising Westinghouse Department

Association of Electragists
INTERNATIONAL

PRESIDENT, James R. Strong,
526 W. 34th Street, New York City.

SECRETARY AND TREASURER, Laurence W. Davis,
15 West 37th Street, New York City.

GENERAL COUNSEL, Franz Neilson,
New York City.

Executive Committeemen

EASTERN DIVISION
W. Creighton Peet,
70 East 45th Street,
New York City

GREAT LAKES DIVISION
L. G. Ross,
1225 Tower Avenue,
Superior, Wisconsin

PACIFIC DIVISION
C. L. Chamblin,
687 Mission Street,
San Francisco, Calif.

SOUTHERN DIVISION
J. A. Fowler,
118 Monroe Avenue,
Memphis, Tenn.

CENTRAL DIVISION
A. Penn Denton,
512 So. West Blvd.,
Kansas City, Mo.

MOUNTAIN DIVISION
E. C. Headrick,
89 Broadway,
Denver, Colorado

EASTERN CANADIAN DIVISION
R. A. L. Gray,
85 York Street,
Toronto, Ont.

WESTERN CANADIAN DIVISION
C. C. Carter,
739 Hastings Street W.,
Vancouver, B. C.

AT LARGE
James R. Strong,
526 W. 34th Street,
New York City.

OPEN SHOP SECTION
Joseph G. Crosby,
140 N. 11th St., Philadelphia.

UNION SHOP SECTION
L. K. Comstock,
21 East 40th Street,
New York City

Past Presidents of the National Electrical Contractors' Association

Charles L. Eidlitz....1901-1903
Ernest McCleary....1903-1905
James R. Strong....1905-1908
Gerry M. Sanborn....1908-1910
*Marshall L. Barnes....1910-1912
Ernest Freeman....1912-1914
John R. Galloway....1914-1916
Robley S. Stearnes....1916-1918
W. Creighton Peet....1918-1920

*Deceased.

COMMITTEE CHAIRMEN

ARCHITECTS AND ENGINEERS
Clyde L. Chamblin
687 Mission St., San Francisco, Calif.

CODE
A. Penn Denton
512 So. West Blvd., Kansas City, Mo.

CONVENTIONS AND MEETINGS
James R. Strong
526 W. 34th St., New York City

COST DATA
Arthur L. Abbott
15 W. 37th St., New York City

CREDIT AND ACCOUNTING
C. C. Carter
739 Hastings St. W., Vancouver, B. C.

ELECTRAGISTS' DATA BOOK
J. A. Fowler
118 Monroe Avenue, Memphis, Tenn.

INTERNATIONAL RELATIONS
R. A. L. Gray
85 York Street, Toronto, Can.

LEGISLATION
E. C. Headrick
89 Broadway, Denver, Colo.

LIABILITY INSURANCE
J. A. Fowler
118 Monroe Avenue, Memphis, Tenn.

MEMBERSHIP
James R. Strong
526 W. 34th Street, New York City.

PUBLICATION
Joseph G. Crosby,
140 N. 11th St., Philadelphia

STANDARDIZATION
L. G. Ross
1225 Tower Ave., Superior, Wis.

TRADE POLICY
(Covering Manufacturers, Central Stations, Jobbers and Merchandising)
W. Creighton Peet
70 East 45th Street, New York City

U. S. CHAMBER OF COMMERCE
L. K. Comstock
21 East 40th Street, New York City

How you can close 75%

of the jobs on which you bid

One electrical contractor writes:

"It is an undeniable fact that the contractor who suggests Holophane can absolutely prove that this equipment will give the best results for the least expenditure. We have sold 75% of the prospects on which Holophane units were suggested."

THIS letter was an expression of opinion from a past president of the New York Contractor-Dealers' Association.

Holophane supplies an engineering service that makes it possible for you to duplicate this performance he describes. Our engineering department — recognized as the leader in the science of light control — will prepare complete specifications for you, showing how any installation, on which you are bidding, should be laid out. Recommendations vary with the specific requirements of each case.

There is no charge for this service. We invite you to profit by it. Use it particularly in going after the big jobs where the big profits are.

HOLOPHANE GLASS COMPANY

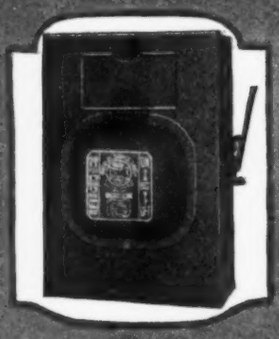
343 Madison Avenue, New York City. Works: Newark, Ohio.

In Canada: 146 King St. W., Toronto

HOLOPHANE

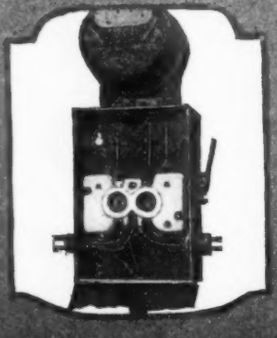
Directs Light Scientifically

NOARK UNIVERSAL SERVICE SWITCH
(Standardized)



PROTECTION SERVICE
JP
JOHNS-PRATT

CONSUMER'S FUSES



THE Perfected Service Entrance Device, consolidating the meter service and distribution devices in a single unit and providing—

All Service Essentials—

1. Enclosure of all live parts
2. Externally operated safety service switch
3. Service cutout
4. Insurance against meter tampering and current theft
5. Meter connection block
6. Meter testing device
7. Lock-Off for Service Inspection

With these Distribution Essentials—

8. Distribution branch block
9. Enclosure of all branch circuit wire connections
10. Enclosed yet readily and safely accessible branch circuit fuses

Costs less-does more

TO supply complete service entrance and distribution facilities with crude, old-time equipment, the Contractor would have to install, with suitable internal and external connections: (1) A service switch; (2) a meter connection and testing block; and (3) a distribution cabinet.

The introduction of the Noark Meter Service Switch, combining the service switch with the meter connections and testing block, reduced this work to that of installing and connecting: (1) A Noark Meter Service Switch; and (2) a distribution cabinet.

Now comes the Noark Universal Service Switch incorporating all three elements—service switch, meter block and branch block—plus enclosed yet accessible load-side fuses—in a *single* device.

Central Station requirements are fully met, the consumer gets a better looking, centralized installation, the Contractor is enabled to furnish a better, simpler and more complete installation at a competitive price.

The* JOHNS-PRATT COMPANY, *Hartford, Conn.

BOSTON NEW YORK CHICAGO SAN FRANCISCO

EXPORT DEPARTMENT, *30 Church St., New York, N. Y., U. S. A.*

7320-4

Another ARROW Accomplishment

An Interchangeable Tumbler Switch

With Composition Handle—Rectangular Slotted Plate Visible Indicator

Arrow Switch in Another Make of Plate with Narrow Slot

ARROW SWITCH WITH ARROW PLATE

1 INCH TYPE		1½ INCH TYPE
6444	Single Pole	6844
6445	Double Pole	6845
6446	Three Point	6846
6447	Four Point	6847

Another Make of Switch with Narrow Handle in an Arrow Plate

Arrow Switch in Another Make of Plate with Wide Slot

Another Make of Switch with Wide Handle in an Arrow Plate

Simplification — Standardization

Arrow Switches and Plates will fit other makes of Switches and Plates of the same type of construction. No need any longer to stock different makes of Tumbler Switches. Use "ARROW COMPOSITION HANDLE TUMBLER SWITCHES" and avoid duplicate stocks and installation troubles. Made in both 1" and 1½" types. For full information send for circular giving complete listing of switches and plates.

THE ARROW ELECTRIC COMPANY
HARTFORD CONNECTICUT

ELECTRICAL ARROW WIRING DEVICES

ARROW

The complete line of Wiring Devices

—and now we keep the servant in the walls

HERE'S a tip to home builders. No need to plan a suite for "servants' quarters". Nowadays there's a servant that fits within the walls, a cheaper and better servant than ever before, a servant just as helpful as you will let it be. We call this marvel, electricity.

Electricity saves space, saves time, saves labor, saves money. It serves you over wires that run under your floors and through your walls. It is on the job night and day, as much or as little as you want. Your electric light and power company sees to that.

Put this willing servant on the job. Make it 100% useful. Call in the man best fitted to plan the installation—the electrical contractor. He will provide adequate circuits and outlets and switches conveniently placed, so that your home will have plenty of light and plenty of power, too, for your hardest work.

Electricity will do it all—and the only "if" is "if you will let it" Talk this over with your contractor.

Published in the interest of Electrical Development by an Institution that will be helped by whatever helps the Industry.

Western Electric Company

Since 1869 makers and distributors of electrical equipment

Number 52 of a series

Solving the Servant Problem with your Help

This advertisement which appeared in September presents clearly to the people in your town that you, the electrical contractor, can give this great servant—electricity—a permanent job in their homes.

And just as the public rely on you to "deliver the goods," so you can rely on Western Electric to supply you with "everything electrical" for the job.

One of our 49 Distributing Houses is near you, fully stocked with the countless electrical supply items that you are constantly needing. Call on this nearby House at any time—and you will find that it too can "deliver the goods."

A TRADE MARK

A nationally advertised article is generally known to its users by its trade mark—a mark of quality, which assures the user that the product has behind it the reputation of its maker.

"LOOMFLEX"

Easy to Cut and Fish—Clean to Handle

A non-metallic flexible conduit, in fact *the* non-metallic conduit, with such a reputation and with such a service by the manufacturer behind its quality, that the consumption throughout the country is steadily increasing. Be one of its users and thus serve your own interests. Look for the BRAND NAME and look for the TRADE MARK and look for the RED BANDED inspection carton in which the product is packed. They all mean a great deal. *Sample by mail, upon request.*

American Circular Loom Co.

90 WEST STREET, NEW YORK

Boston Pittsburgh Chicago Los Angeles Portland

It's a DURABILT PRODUCT

Reg. U. S. Pat. Off.

---that means Quality

DURAFLEX

Reg. U. S. Pat. Off.

is made to give you an armored conductor which is extremely flexible and absolutely safe.

The insulation of DURAFLEX is made entirely in our own plant, from tested materials. We are thus assured uniform high quality.

The clean, easily stripped armor means easy installation. Combined with our safe insulation, it is a visible sign of the superior quality of DURAFLEX.

Tubular Woven Fabric Co.

Pawtucket, R. I.

PITTSBURGH STANDARD
THREAD PROTECTED
ENAMELED CONDUIT
PATENTED

More Speed—More Profit!

COUNT time lost as profit lost; count time gained as profit gained —that's why it pays to use Pittsburgh Standard Enameled Conduit.

"Reaches the job ready to install." Patented Thread Protectors eliminate running dies over pipe ends and reversing couplings — a tidy sum added to your net on every job.

P. S. costs no more than ordinary enameled conduit. Every cent of the saving it makes goes straight into your pocket. And you multiply this saving on every length of P. S. that you install.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Only 15 Days More!

IN WHICH TO WIN $250.00

The Society for Electrical Development

IS GIVING 12 CASH PRIZES FOR BEST SALES PLANS ON "HOW TO SELL ELECTRIC FANS FOR DIVERSIFIED USES."

Simply tell how you would sell fans all-year-round. Contest open to all dealers in electric fans and their salesmen. Read "Rules for the Contest" below.

PRIZES

1st Prize	$100.00
2nd Prize	50.00
3rd to 12th Prizes	10.00 each

In case of ties the full amount of the prize tied for will be awarded to each tying contestant.

Rules for the Contest

Select any one of the uses of the fan listed on this page or other off-season use and tell how you would plan a campaign to sell fans for that use. Be brief but make your plan sufficiently inclusive so that other dealers may put it to work.

Contestants should suggest three additional off-season uses for fans.

Contestants should accompany sales plans with a photograph of a window display showing off-season use of fans of any make or showing fans displayed in connection with other commodities.

All plans will become the property of The Society for Electrical Development, and will be put to such use as it may wish to make of them for the benefit of the industry.

Contest begins Sept. 1; closes Oct. 15, 1924.

Judges: Messrs. E. W. Austen, Toronto, Canada; S. W. Bishop, Denver; C. L. Chamblin, San Francisco; J. W. Collins, Chicago; and J. E. North, Cleveland, have kindly consented to act as judges.

Prize winners will be announced in the December issue of this publication.

Prizes will be awarded on the basis of practicability, completeness, inspirational value of the plans and originality of ideas.

Sales plans and photographs should be sent to

THE SOCIETY FOR ELECTRICAL DEVELOPMENT
522 Fifth Avenue, New York City
Attention of R. G. ZINDLE, Supervisor, Electric Fan Promotion.

10 DIVERSIFIED ELECTRIC FAN USES

1—To stimulate radiation in cold rooms with hot air furnace.

2—To increase draft in furnace.

3—To speed up the drying of laundry.

4—To speed up the drying of freshly varnished furniture or floors.

5—To aerate the refrigerator after it has been cleaned.

6—To dehydrate fruits and vegetables.

7—To dry white shoes after cleaning.

8—To dry hair quickly.

9—To remove frost from windows in winter.

10—To eliminate cooking odors from the kitchen.

The Society for Electrical Development has just produced an issue of "Sales Helps" containing a number of merchandising suggestions for off-season fan selling. Copies of this "Sales Helps," price 50 cents each, will be sent for 25c prepaid upon request (to be accompanied by remittance) to contestants. This is not a requirement to enter the contest.

A Fan to Sell the Year 'round

Emerson Jr. Ventilator

EMERSON JUNIOR—the 9-inch fan of full Emerson quality at a popular price—fitted up as a ventilator, opens the way to year 'round fan sales.

There is a waiting and welcome market for a popular priced, easily installed, fool-proof ventilator. Home kitchen ventilation in these days of compact building is no longer a convenience but a practical necessity. And in bathrooms, pantries, laboratories, phone and phonograph booths a ventilator is necessary equipment. Line up to go after this business. Send for our bulletin 3513 and other printed matter. Order a sample.

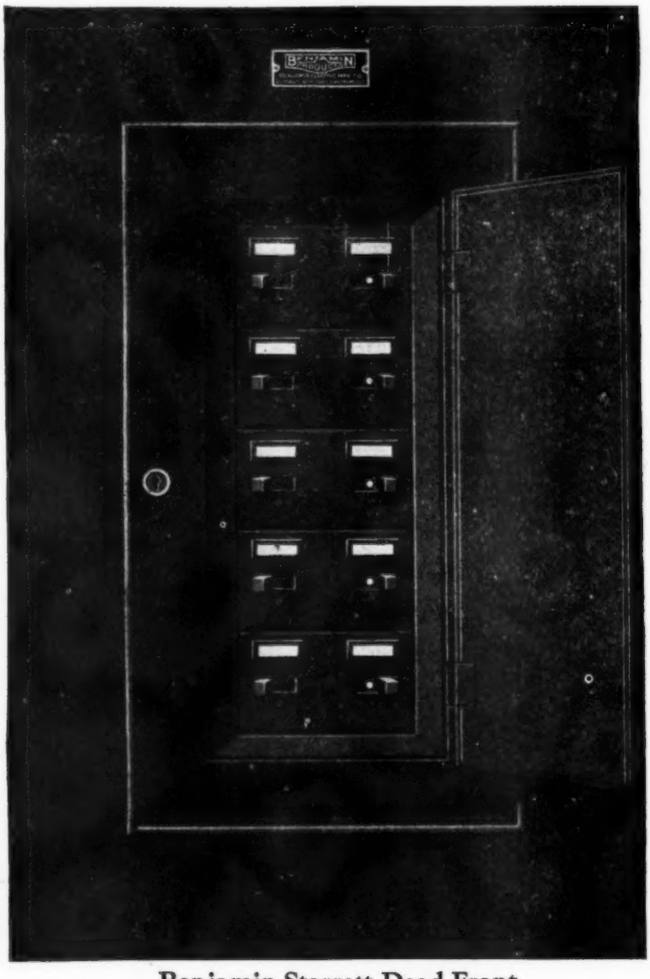
Emerson Jr. Ventilator is carried in stock by 70 distributors. Emerson 12 and 16 inch ventilators, too!

The Emerson Electric Mfg. Co.

2018 Washington Avenue

50 Church Street
New York City

St. Louis, Mo.



Benjamin-Starrett Dead-Front
Standardized Panel Board

Benjamin-Starrett

Panel Boards

Years of service under a host of conditions has brought Benjamin-Starrett Panel Boards a reputation for quality and appearance envied by every maker.

Lightness, ease of installation, convenience and safety are all provided for in a design covered by the famous Starrett patents.

The contractor finds that these panels, while constructed of the very best material and made with every part to fit, are the cheapest in the end, because they not only save him money in handling and installation, but each job brings him more and more on account of the fine appearance of the finished work.

At the Convention and Exhibit of the Association of Electragists [International], West Baden Springs, September 29 to October 4, 1924, Benjamin-Starrett Panels will be shown, and there will be some new things there both in panels and other electrical devices and apparatus of interest to the men finally responsible for the proper working of the Electrical Code.

Booth No. 45
Visit It!

Benjamin Electric Mfg. Co.

120-128 So. Sangamon St., Chicago

247 W. 17th St., New York **580-582 Howard St., San Francisco**

"Circle T" Safety Switches

HERE is a mark that means something to Electragists—that Contractors count on when they are planning and selling installations of Safety Switches.

"Circle T" is a symbol that stands not only for Quality and Service, but for Helpfulness—a desire to work *with* the Electragist and to give him the kind of co-operation he needs to "get the job."

The Annual Convention at West Baden provides a good time to consider what the "Circle T" trademark—and the line that it stands for—has meant to you in the past and how it can help you in the future.

We hope you will call around at our Exhibit at the Convention (Booth No. 15) and give us an opportunity to tell you and show you more about "Circle T" standards.

The Trumbull Electric Mfg. Co.

Plainville, Conn.

New York 114 Liberty St. | Boston Philadelphia | Chicago 2001 W. Pershing Rd. | San Francisco 595 Mission Street | Atlanta

The Industrial Standard for More Than 20 Years

Triangle Conduit Company, Inc.

FACTORIES

Brooklyn, N.Y. **Chicago, Ill.**

GENERAL OFFICES

Dry Harbor Road and Cooper Ave.

Brooklyn, N.Y.

Armored Conductors

Flexible Steel

Conduit

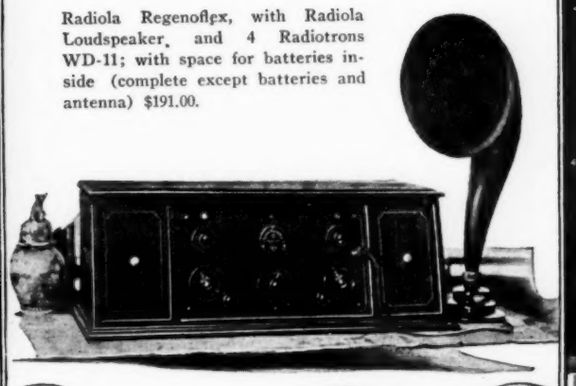
Pay us a visit while at the Convention—Booth 47

Triangle Agencies:

SAN FRANCISCO	PITTSBURGH	ST. LOUIS	DENVER
PHILADELPHIA	CLEVELAND	BUFFALO	BOSTON
NEW ORLEANS	LOUISVILLE	DETROIT	

24th Annual Convention—Association of Electragists

Sell Tone Quality

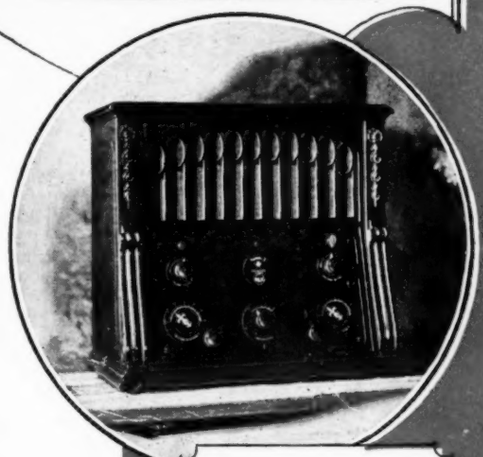


Radiola Regenoflex, with Radiola Loudspeaker, and 4 Radiotrons WD-11; with space for batteries inside (complete except batteries and antenna) $191.00.

EVERY RADIOLA has its outstanding selling points. Strongest of all—and easiest to prove—is **tone quality.**

The Regenoflex circuit has other achievements to boast of, too. It gets big distance—it is non-radiating—it is extremely simple to operate, yet very selective. And it operates on dry batteries.

But above all—the universal appeal—is a surpassing clearness and **reality** of tone, reproducing music and voice with perfect clarity and sweetness—and no background noises. And tone quality is the one big thing that everyone wants in radio.



The Regenoflex circuit, richly cabineted, with its own loudspeaker enclosed—a special new loudspeaker gaining swift fame for its rare tone quality.

Radiola Regenoflex is advertised for October with full pages in these magazines. Are your stocks ready to meet the demand?

Saturday Evening Post, Literary Digest, Popular Science Monthly, American Boy, Atlantic Monthly, Harper's Magazine, Scribner's Magazine, Popular Mechanics.

Radio Corporation of America

Sales Offices:

233 Broadway, New York, N. Y.
10 So. La Salle Street, Chicago, Ill.
433 California Street, San Francisco, Cal.

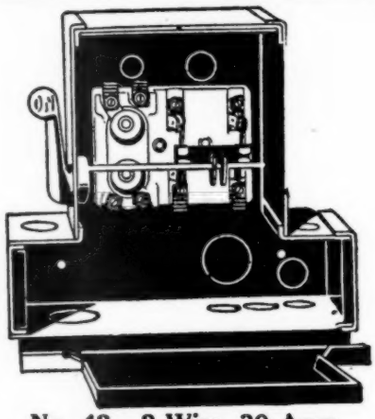
This symbol of quality is your protection.

RCA

Radiola

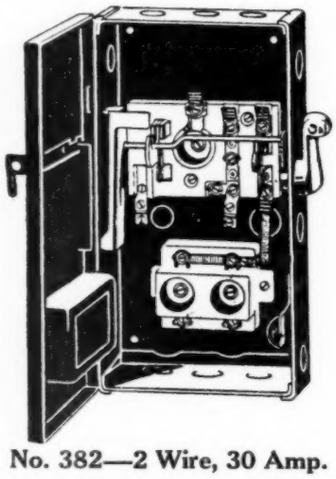
REG. U.S. PAT. OFF.

WADSWORTH



No. 42—2 Wire, 30 Amp.

The ideal switch for Bank installations. Eliminates the use of nipples, extra fittings, etc. for connecting adjacent switches. Has ample wiring space for bus wires.



No. 382—2 Wire, 30 Amp.

Has branch fuses for two single fused branch circuits; insures 100 per cent safety as branch fuses are not accessible until switch is open. Ample wiring space for extension lugs for line connections

BETTER SAFE

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

Safety Switches

WADSWORTH Safety Switches are Better Safety Switches—as Contractors who sell and install them *know*.

Wadsworth superiority comes from better design and better construction—advantages which naturally result in better service.

We will exhibit our complete line of Externally Operated Safety Switches at the Convention at West Baden (SPACE NO. 65) and extend a cordial invitation to every Electragist attending the Convention to make a "get-acquainted" call at our Booth.

If you do not attend the Convention, our distributor nearest you will be glad to demonstrate Wadsworth Switches to you and show you why they are better—both for meter entrance and industrial work.

WADSWORTH ELECTRIC MANUFACTURING CO.
Covington, Kentucky

TY SWITCHES

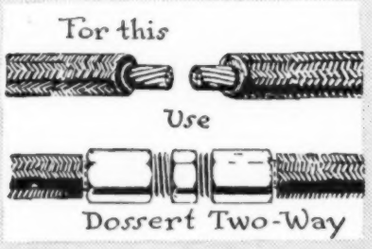
NEW— **1** A complete revised catalog—just off the press **2** A three color wall card as illustrated below

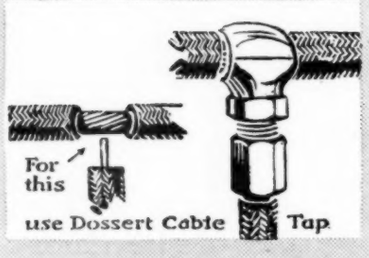
Where your Wires or Cables Come Together

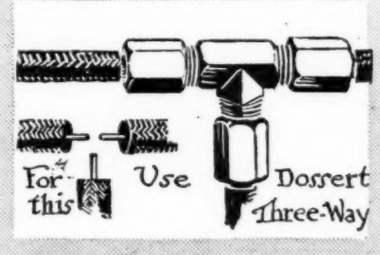
CONNECT 'EM WITH

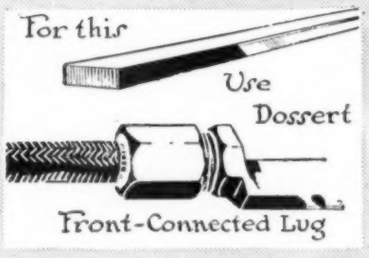
DOSSERTS

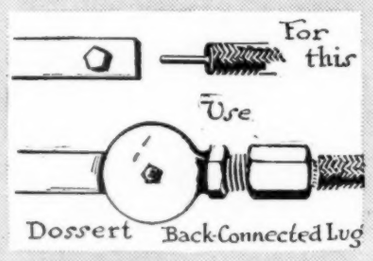
THE TAPERED SLEEVE SOLDERLESS CONNECTORS

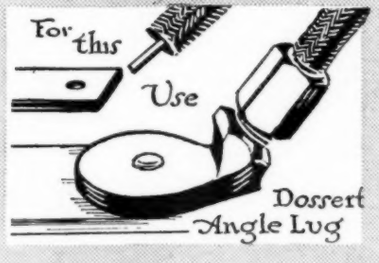


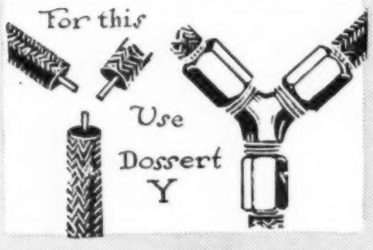


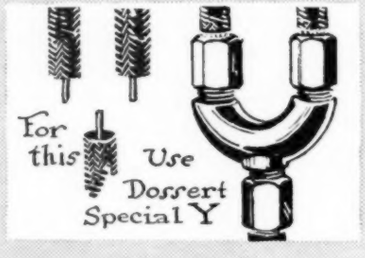


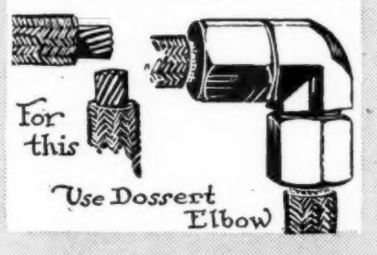


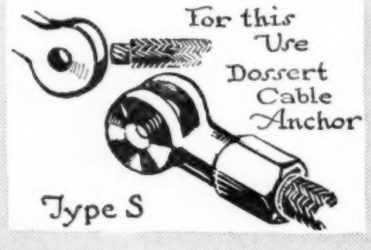


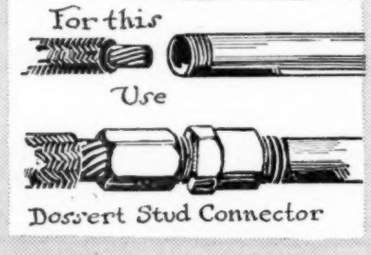


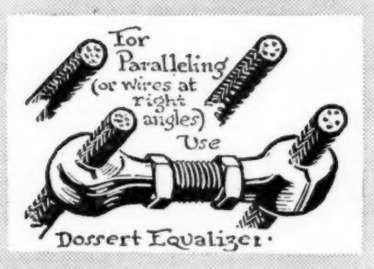












SEND FOR CATALOGUE TWENTY. DOSSERT & CO., 242 WEST 41ST ST. NEW YORK

Copyright, 1923, Dossert & Company

To Dossert & Co.,
242 West 41st St., New York City.
Please send new colored wallhanger and new catalog to the address below.

Name _____ **Address** _____
Company _____ _____

Ettco

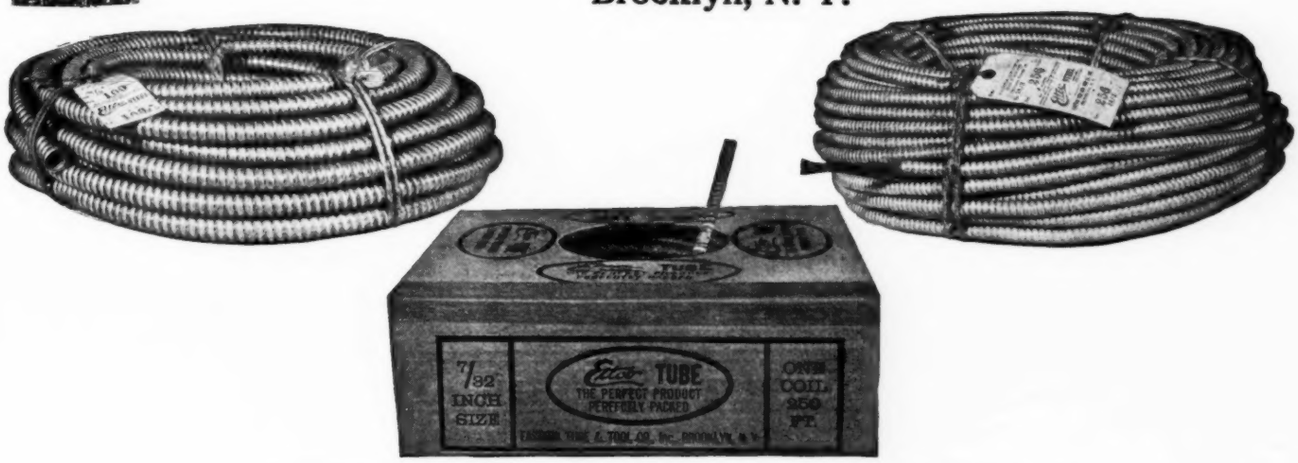
Quality Service Square Deal

OUR idea of service is, first of all, to make products of never-failing quality; to distribute them through the established trade channels so that they will be readily available everywhere and to stand squarely back of them on quality, service and price. It is this kind of service that is making *ETTCO* Products the first choice of thousands of thinking contractors—men who make the word *"ETTCO"* their guide when buying Armored Conductors and Non-Metallic Conduit.

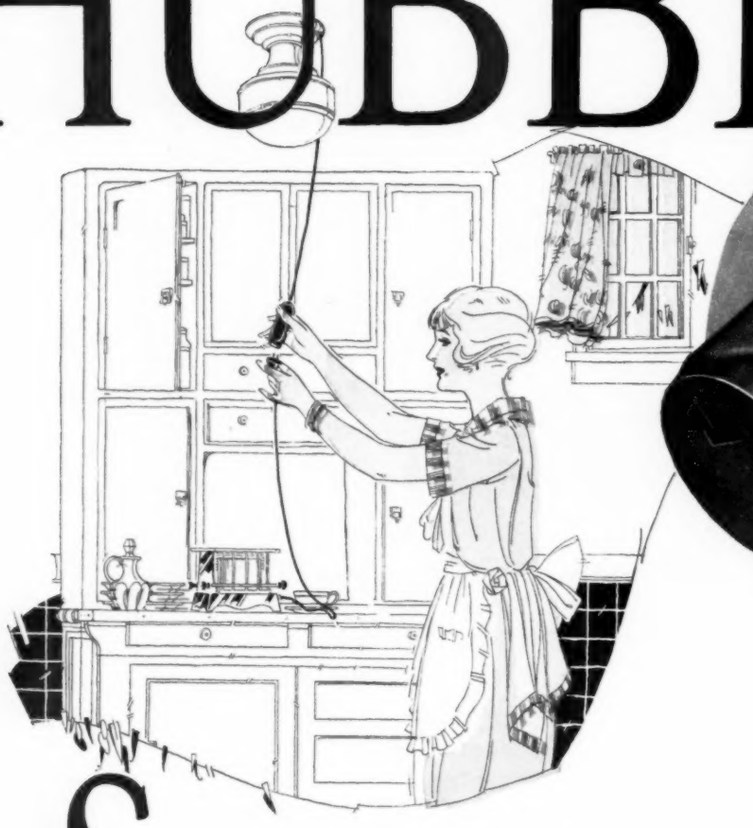
We will exhibit at the Convention at West Baden—Space No. 76

Eastern Tube and Tool Co., Inc.

Brooklyn, N. Y.



HUBBELL



CATALOG NO. 7020

Switch-Plug

An independent *switch* for the light; an *outlet* for any appliance—combined in one device.

The switch controls the light only—the outlet is always "alive."

Ideal for Kitchen, Store and Industrial Lighting Units.

Easily installed on either new or old installations. *Ample space provided for large cord knot.*

Get your share of this profitable business.

No. 998

PULL RECEPTACLE
for Ceiling Fixtures

Saves Time and Labor

Easy to wire—binding posts are accessible and porcelain is deeply recessed to provide ample wiring space.

Each receptacle is furnished with an extra chain eyelet which can be riveted or spun on shell of ceiling fixture or outlet box cover.

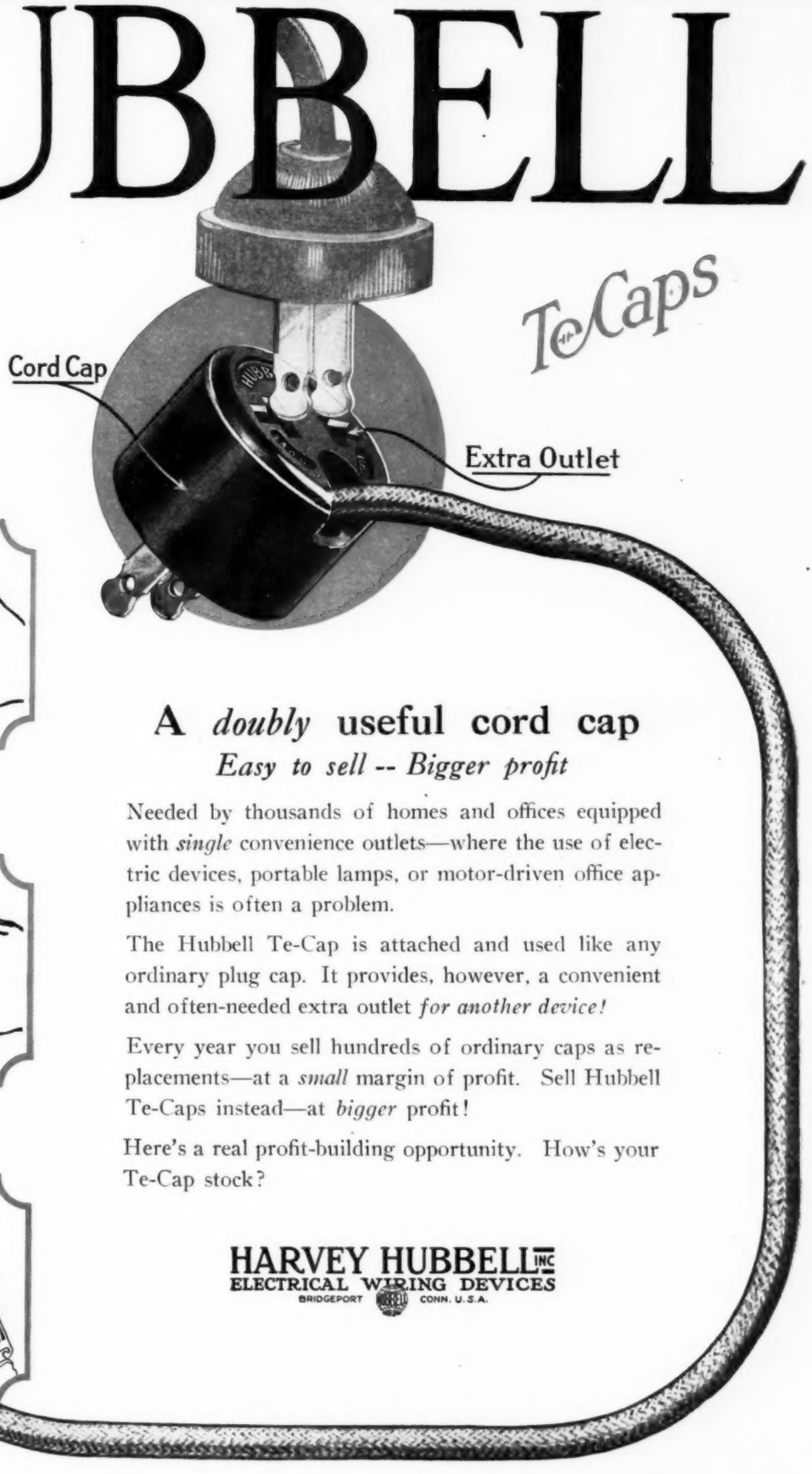
HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

Remember it's the Te Slots, that make outlets "Convenient"

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

HUBBELL

Te-Caps



A *doubly* useful cord cap

Easy to sell -- Bigger profit

Needed by thousands of homes and offices equipped with *single* convenience outlets—where the use of electric devices, portable lamps, or motor-driven office appliances is often a problem.

The Hubbell Te-Cap is attached and used like any ordinary plug cap. It provides, however, a convenient and often-needed extra outlet *for another device!*

Every year you sell hundreds of ordinary caps as replacements—at a *small* margin of profit. Sell Hubbell Te-Caps instead—at *bigger* profit!

Here's a real profit-building opportunity. How's your Te-Cap stock?

HARVEY HUBBELL INC
ELECTRICAL WIRING DEVICES
BRIDGEPORT CONN. U.S.A.

HUBBELL ELECTRICAL WIRING DEVICES

P–P COMPLETE IN ITS FIELD P–P

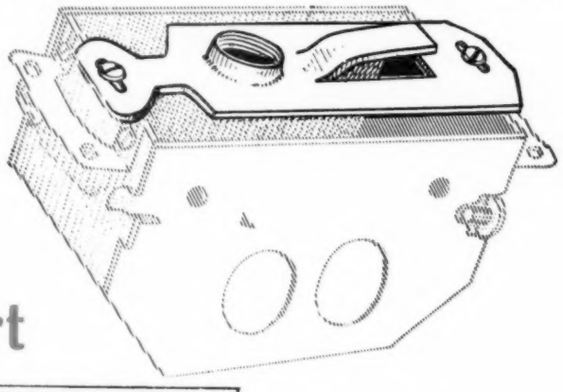
PEERLESS PRODUCTS LINE

ELECTRICAL FITTINGS AND FIXTURE HANGERS

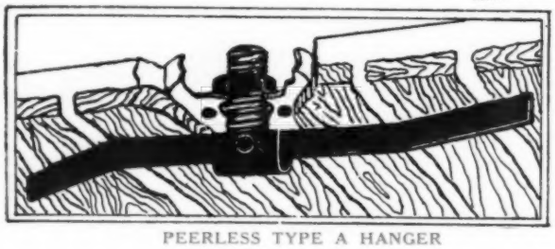
LABOR SAVERS——TIME SAVERS——MONEY SAVERS

THE LINE DEVELOPED BY SPECIALISTS WHO KNOW WHAT THE CONTRACTOR NEEDS

Peerless Wall Case Bracket Support



This Peerless Wall Case Bracket Support and Adapter fastens directly to any 3 inch. or 3¼ inch box or to any standard wall case and permits hanging, without use of stud or hickey, any wall bracket equipped with either stem or French back or any ceiling fixture equipped with ¼ inch stem.



PEERLESS TYPE A HANGER

The Old Work Hanger

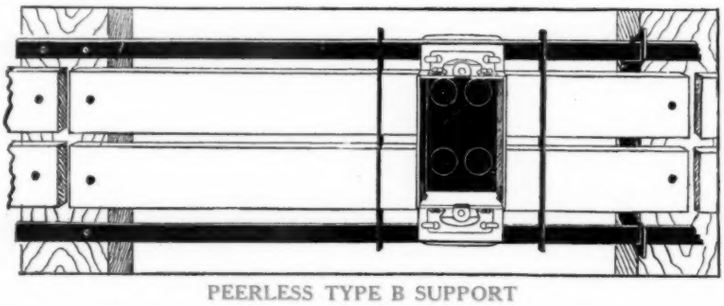
Type A Peerless Hanger is designed to securely and economically install ceiling and side wall outlets in houses and buildings already completed and plastered where electric fixtures were not originally planned for.

It is strongly made of steel and comes equipped with ⅜ inch nipple or stud and locknut and because of toggle bolt construction the nipple or stud may be folded into hanger, which permits installation through a hole as small as 1½ inch in diameter. This toggle bolt construction also makes our Type A Hanger self-aligning and therefore insures straight hung fixtures. No screws or nails are needed to install.

PEERLESS TYPE G HANGER

This Peerless Hanger is designed for new work.

The nipple or stud on Type C Hanger is of ⅜ inch pipe, full threaded, suspended on an 18 inch steel rod and is adjustable to any position or spacing between beams. This steel bar has a short right angle point at one end, easily driven into bottom of beam thus preventing sidewise movement of bar; the two adjustable pointed slide fasteners are driven into sides of beams, supporting and holding hanger rod in place. No nails or screws are used to install this hanger.



PEERLESS TYPE B SUPPORT

Type B Support is designed for the better installation of Switch or Receptacle Boxes in new buildings.

This Peerless labor saving device consists of two strong steel bars each 18 inches long, equipped with lath-holders or supports and adjustable steel clips which fasten to any standard wall cases.

Type B Support is so designed that at any time an additional box may be added without defacing the wall.

The saving in labor through the use of this device is enormous as compared with the old way of installing Switch Boxes.

SEND FOR COMPLETE CIRCULAR

PEERLESS ELECTRO PRODUCTS CO.

NEW YORK 53 Park Place | PITTSBURGH Keenan Bldg. | BOSTON 10 High Street | BALTIMORE, MD. 200 Holliday St. | PHILADELPHIA 30 Bank St. | INDIANAPOLIS 505 Odd Fellows Bldg. | LOUISVILLE Kenyon Bldg.

CENTRAL CONDUIT

The Path of Perfect Wiring

PERFECT Wiring is the result of good materials plus good workmanship—when both are backed by the contractor's desire to do only work that is best for his customer and—in the long run—best for himself.

"Good material" means not only using products of quality; it means, also, using **methods** of quality—planning, selling and installing a WIRING SYSTEM that is right.

The contractor who wires throughout in metal is giving his customer the best method or type of installation that it is possible to employ; when he encloses all wires in rigid conduit, he provides the ultimate in permanence, protection—and satisfaction.

"Central" Conduit can be a big help to the contractor who wants to travel along the Path of Perfect Wiring; it is a product of quality whose use insures a **method** of quality—a combination that cannot fail to produce the highest type of work.

Central Tube Company

PITTSBURGH, PA.

Manufacturers of

"Central White" Galvanized —Wrought Conduit Pipe— "Central Black" Enameled

"Time has proved their worth"

We satisfy as to Quality and Service. ¶In many Prominent Structures in every American City

our

"GALVADUCT"

and

"LORICATED"

RIGID STEEL CONDUITS

Have been Installed

NEW YORK V. F. Gates 30 E. 42nd St.	ATLANTA H. C. Biglin 138 Marietta St.
CHICAGO M. B. Austin & Co. 108 S. Desplaines St.	LOS ANGELES Ewing-Lewis Co. Equitable Building
BOSTON S. B. Condit Jr. Co. 261 Franklin St.	SAN FRANCISCO Ewing-Lewis Co. Underwood Building
DENVER B. K. Sweeney Elec'l. Co. 13th Ave. & Broadway	SEATTLE Ewing-Lewis Co. Hoge Building

HOME LIGHTING CONTEST

Manufactured Solely By

GARLAND MANUFACTURING COMPANY

PITTSBURGH, PA.

Possibilities that became Facts

The following is a reprint from the announcement of the New Large Size Wiremold Fittings, published October 1923:

"You're all right as far as you go", said the wiremen. "Wiremold is certainly the money-saving method of surface wiring, combining neatness, efficiency, and all-round satisfaction, but the great pity is that we are unable to consider Wiremold on our real big installations because the fittings are not large enough to carry four wires."

There in a nutshell is the reason for the new series of large size Wiremold fittings placed on the market, and the beauty of it is that these new fittings are equipped with double twistouts, making it possible to use them interchangeably with Catalogue No. 500 or Catalogue No. 700 Wiremold Conduit.

This new development completes the Wiremold System, opening up tremendous new fields for surface wiring, such as industrial plants, school houses, hospitals, office buildings, department stores and the like.

The new fittings give you the rugged strength and the wiring room you need, and are the result of the best thought of architects, engineers, contractors and wiremen, cooperating with a committee composed of members of the Wiremold organization.

These new large size fittings have made possible big Wiremold installations, some of which are—

Gilchrist Department Store
Boston

R. H. Stearns Department Store
Boston

Harvard University
Cambridge

Yale University
New Haven

John Hancock Life Insurance Co.
Boston

Boston Terminal R. R.
South Station, Boston

Taylor-Symonds Co.
Providence

Aetna Life Insurance Co.
Hartford

N. Y., N. H. & H. R. R.

Southern N. E. Telephone Co.

Macy Department Store
New York City

Standard Oil Co. Building
New York City

Presbyterian Building
New York City

Cotton Exchange Building
New York City

Cunard Building
New York City

Tropper Silk Hosiery Mills
Elmhurst, L. I.

Transportation Building
Long Island City

Public Schools
New York and Brooklyn

Strawbridge & Clothier
Philadelphia

John Wanamaker Co.
Philadelphia

Gimbel Brothers
Philadelphia

Bay View Hospital
Baltimore

Public Schools
Baltimore

Charity Hospital
New Orleans

Knoxville Hospital
Knoxville Tenn.

Southern Bell Tel. & Tel. Co.
Jacksonville Fla.

Schuster Department Stores
Milwaukee

Gimbel Brothers
Milwaukee

Walter Reed Hospital
Washington

General Motors Building
Detroit

Auditorium Building
Milwaukee

Cornell University
Ithaca, N. Y.

Endicott-Johnson Co.
Jersey City

Bethlehem Steamship Co.
San Francisco

Put your wires on the Surface with Wiremold Conduit.

Everything from the panel to the lamp socket.

Ask your jobber or write us for information

WIREMOLD
HARTFORD, CONN.

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

ELECTRAGISTS' CONVENTION.

Look for the Circle "W"

THE WESTINGHOUSE LAMP COMPANY is exhibiting a complete line of Westinghouse Mazda Lamps for general lighting purposes at the 24th Annual Convention of the Association of Electragists, International.

The new spray colored lamps are featured as well as the most recent dealer helps including window trims, folders, blotters, etc. There is also on display the new Westinghouse dealers' outdoor sign.

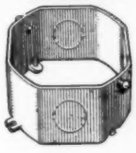
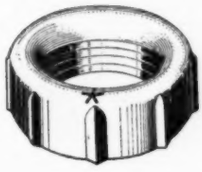
Copies of lighting specifications and store layouts prepared by the Illumination Bureau and the Sales Promotion Section for Authorized Agents for Westinghouse Mazda Lamps are shown to illustrate the extent and completeness of Westinghouse dealer service.

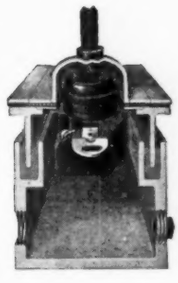
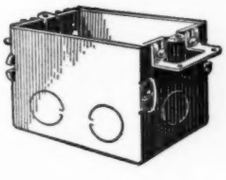
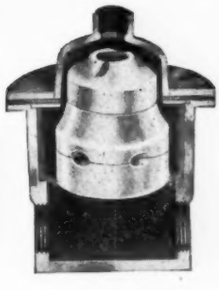
One of the attractions on the convention program is the daily showing of the Westinghouse merchandising film, "Show 'Em How."
If you are among those present, be sure to call at the Westinghouse booth.

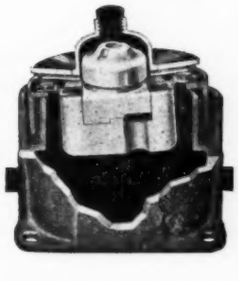
WESTINGHOUSE LAMP COMPANY
150 BROADWAY, NEW YORK, N. Y.
Sales Offices and Warehouses Throughout the Country
For Canada: CANADIAN WESTINGHOUSE CO., Ltd., Hamilton, Canada

Westinghouse

Steel City Products Known to Electragists Everywhere!



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Made by a Company conceded to be one of the best in its line, distributed by leading Jobbers and used by skillful and conscientious Contractors, Steel City Products are winning wide popularity in the trade.

We extend greetings to the Association of Electragists, International, on the occasion of their twenty-fourth Annual Convention, West Baden Springs, Indiana, September 29-October 4, 1924, and all good wishes for the success of future work.

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The All-Metal Code for electrical wiring—where it exists at present—its possibilities for general adoption.

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THE ALL-METAL CODE

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Wurdack Electric Mfg. Co.

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Frink, Inc., I. P.
Hubbell Inc., Harvey
Ostrander & Co., W. R.
Partrick & Wilkins Co.
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General Electric Co.
Westinghouse Elec. & Mfg. Co.

SWITCHES, FIXTURE
Arrow Electric Co.
Hubbell Inc., Harvey
Pass & Seymour, Inc.

SWITCHES, KNIFE
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General Electric Co.
Hart Mfg. Co.
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SWITCHES, SAFETY
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General Electric Co.
Johns-Pratt Co.
Mutual Elec. & Mach. Co.
Trumbull Elec. Mfg. Co.
Wadsworth Elec. & Mfg. Co.
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General Electric Co.
Hart Mfg. Co.
Hubbell Inc., Harvey
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Pass & Seymour, Inc.
Trumbull Electric Mfg. Co.

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General Electric Co.

SWITCHES, VOLTMETER
Adam Electric Co., Frank
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Appleton Electric Co.
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WIRE, IRON
American Steel & Wire Co.

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Atlantic Ins. Wire & Cable Co.
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Ansonia Electrical Co.
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No delays on the job

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For high grade wiring

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For high class work at minimum cost

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For knob and tube wiring and the like

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For 600 volts or less

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For the electrical circuits of motor vehicles

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A TWIRL of your hand and the coupling spins snugly on—when the conduit is **Sheraduct.** Every thread clean and sharp as a baby's new tooth, threads are protected—and protected uniformly.

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END-O-LETS reduce end fitting costs, on open conduit installations. Especially desirable when motors, switchboards and meter boards are installed.

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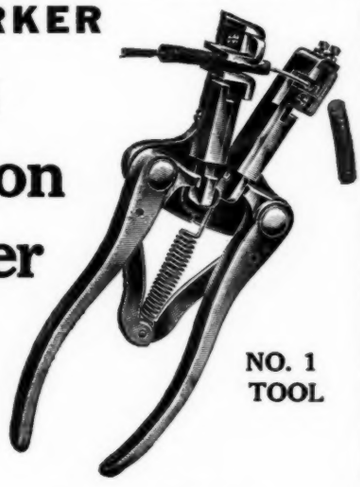

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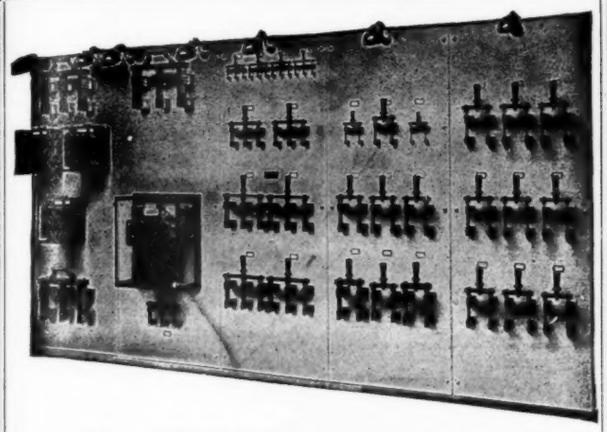

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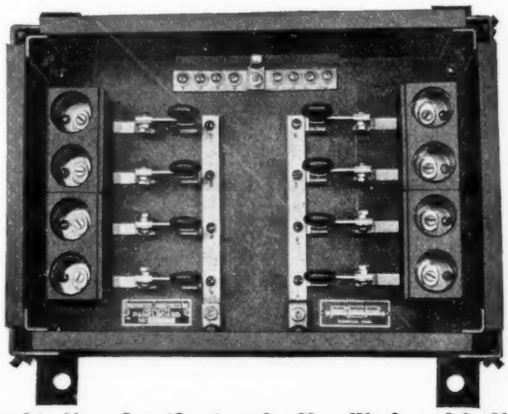

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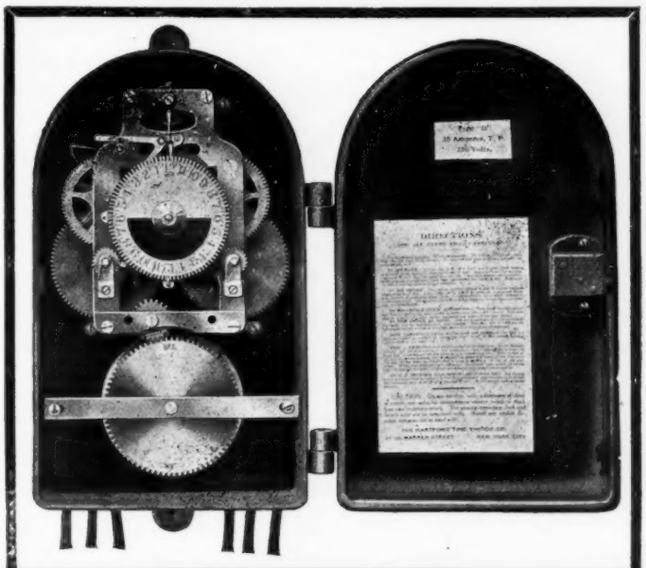

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1924 Model

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The 1924 model Hartford Time Switch embodies more real and lasting value than has ever been offered by any one.

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←—Note the Steel Clamp

No. 567—Stud Box for straight electric work.
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←—Note the Iron Clamp

Both approved by National Board of Fire Underwriters.

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Both have Large and Accessible Screws.

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Thousands of each have been successfully installed. Thousands MORE WILL BE.

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You can do it best with

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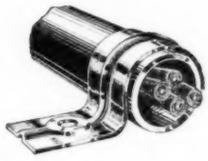

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Galvanized.

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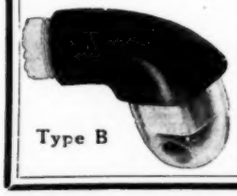
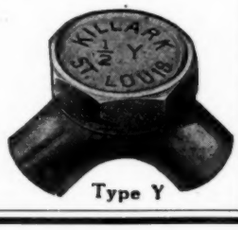


Type B



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is that flexible non-metallic which is most generally specified and used because it possesses every essential feature necessary to easy installation, strength for protection and great length of service—not forgetting those important elements of *positive safety.*

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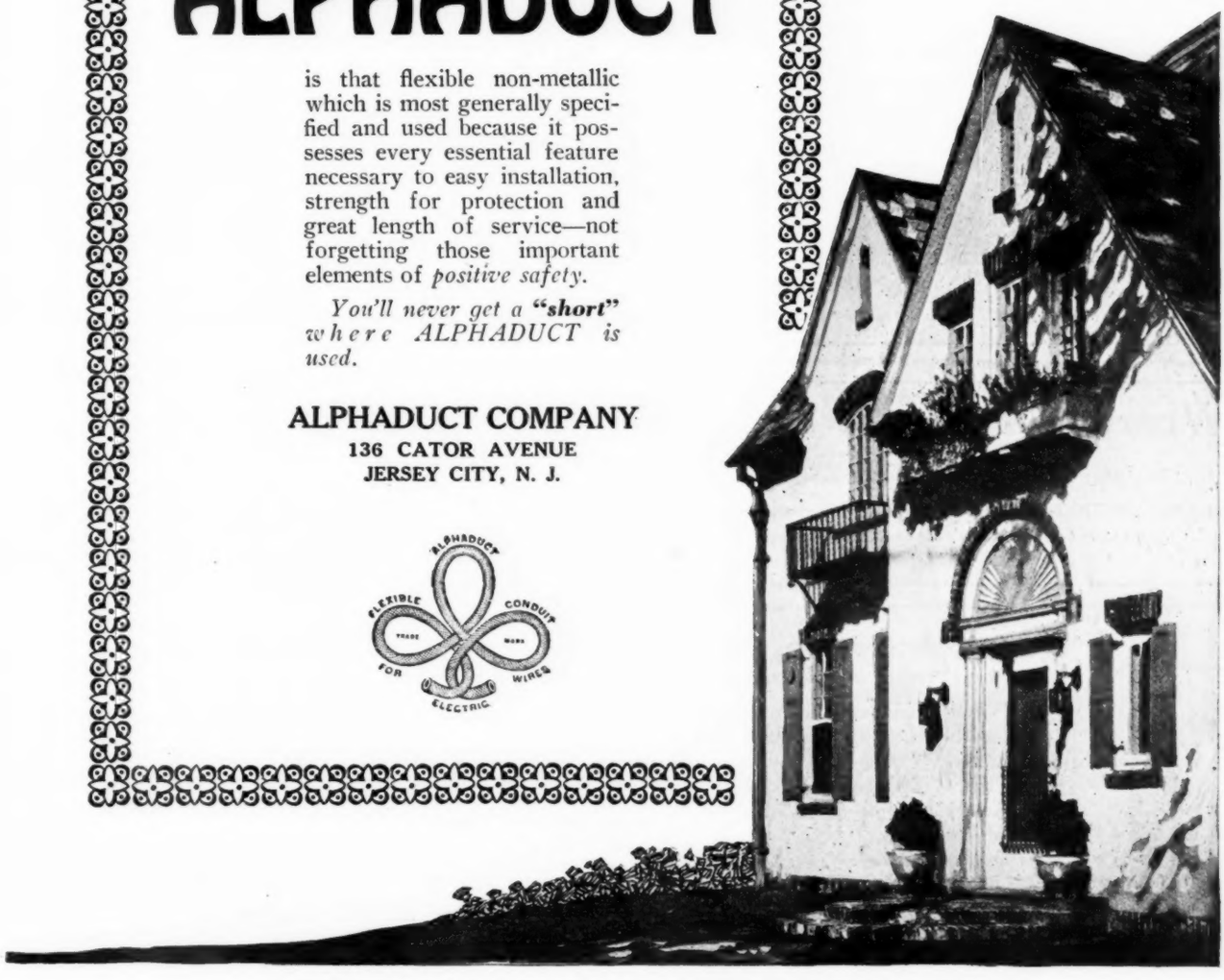

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Build your business with S. & A. *Standardized Lighting Fixtures* in *Standardized Finishes.* They combine the "made-to-order" *look* with prices rivaling those offered on ordinary "ready-made" fixtures.
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The **Fitz-M-All Outlet Box Hanger** has been designed by a practical electrician who has studied the requirements of electricians for years. The results speak for themselves.

This simple device may be used with equal results on old or new work with either conduit, loom or armored cables; can be positioned up or down for deep or shallow boxes, slides in or out to the exact position desired.

Any style box may be used; does not interfere with conduit pipes, cable or wire. Made in two sections for easy installation on all work.

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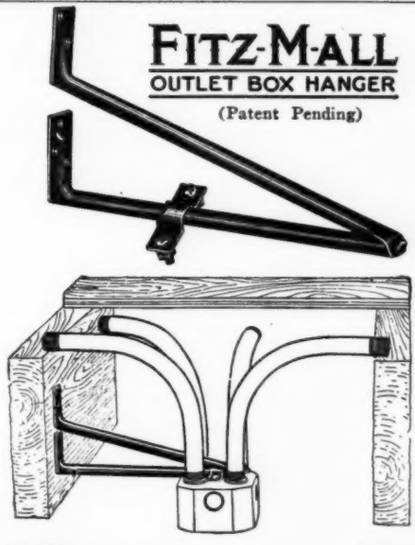

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Can be used on any box with an ear, either conduit or loom.

No accurate measurements are required.

There is no worry about the Plumber or Furnace man having his pipes in the space intended for your switch-box—all you need is space enough for the switch box, because the Kruse Strip nails to the face of the studding.

They cost the electrical contractor 10c per set or less in quantities. Saves from 50 to 75 cents on each box installed and makes a better job.

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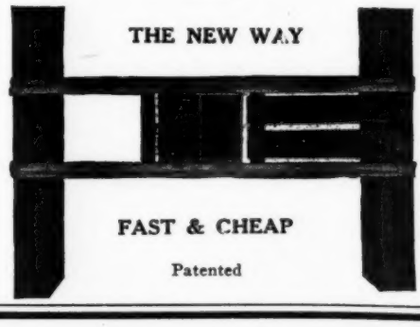

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Rubber Insulated Wire
offers to the electrical contractor an opportunity to secure satisfied customers and a satisfactory profit for himself.
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Will prevent the inspector turning down your jobs because of poorly soldered connections. Play safe.

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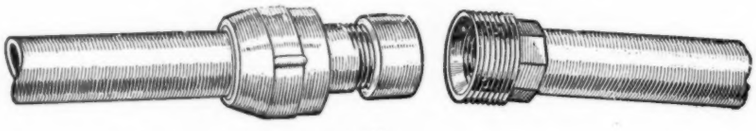

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No chasing back to the shop to cut or bend pipe or conduit, thread pipe, etc. You do it right on the job on your Martin. The job is finished in less time and with about half the ordinary effort. The Martin sets up easily and quickly; no bolts, just stick the legs in. Every contractor should have one.

FREE TRIAL OFFER

Write us on your letterhead to send you a Martin for a free trial. We pay transportation both ways if stand isn't satisfactory. Just try it.

Start now to cut your overhead as hundreds of contractors have before you.—Any established contractor is entitled to a ten days' free trial.

H. P. MARTIN & SONS

804 W. 12th St., Owensboro, Ky.

DOLPHIN ATLANTIC

ATLANTIC

Insulated Wires

Atlantic Insulation is notable for its dependability and maximum service.

DOLPHIN, Code; TRITON, Intermediate Grade 25% Para; and NEPTUNE, 30% Para; are three widely known and extensively used Atlantic Wires.

If you want to build or hold a reputation for quality work, see that "Atlantic" goes in the job.

Price lists and discounts upon request.

ATLANTIC Insulated Wire & Cable COMPANY

STAMFORD, CONN.

Rubber Insulated Wires and Cables

Insulating Tapes and Splicing Compounds

Raven Core Wires

Grimshaw Tapes

Competition Tapes

New York Insulated Wire Co.

Main Office: 114 Liberty Street, New York City

Factory: Wallingford, Conn.

KwikoN

TRADE MARK REGISTERED

A MARK OF QUALITY

Buy Conduit Fittings by this mark. They are better than others and cost no more.

S. R. FRALICK & COMPANY

15 SOUTH CLINTON STREET :: CHICAGO

WAHLE PRODUCTS ARE AMERICA'S STANDARD

No. 2232

All types of fixtures for use in the Home

You need a few samples and the—

WAHLE SELLING PORTFOLIO

You are not required to tie up your money for stock.

Sold exclusively through Wahle Distributors in Fifty-six distributing warehouse centers.

Wahle Selling Portfolio

Write your nearest Wahle Distributor for further information and details.

No. WM-1

See our Exhibit at the Convention of the Association of Electragists at West Baden, Ind.—September 29th-October 4th.

ALBERT WAHLE COMPANY, Inc.

224 Fifth Avenue New York City

No. WM-7

Contractors — Dealers

The most efficient and economical reflector for sign lighting!

WHEELER

PORCELAIN ENAMELED STEEL

NO WASTE LIGHT
FEWER UNITS NEEDED

Made for 75, 100, 200, 300 and 500 Watt Lamps

ISOLUX

DRAWN IN ONE PIECE

"RECTANGULAR REFLECTORS FOR RECTANGULAR SIGNS!"

The broad, even light distribution of the ISOLUX is due to its rectangular outlet which allows the flat reflecting planes to throw the light over the entire board—lighting the corners and bottom of the board as well as the central areas.

Write today for descriptive circular

WHEELER REFLECTOR CO., BOSTON, MASS.

Plug-in-Switch and Everything

A bigger and better Kitchen Unit with permanent porcelain enamel finish.

Ready to install!

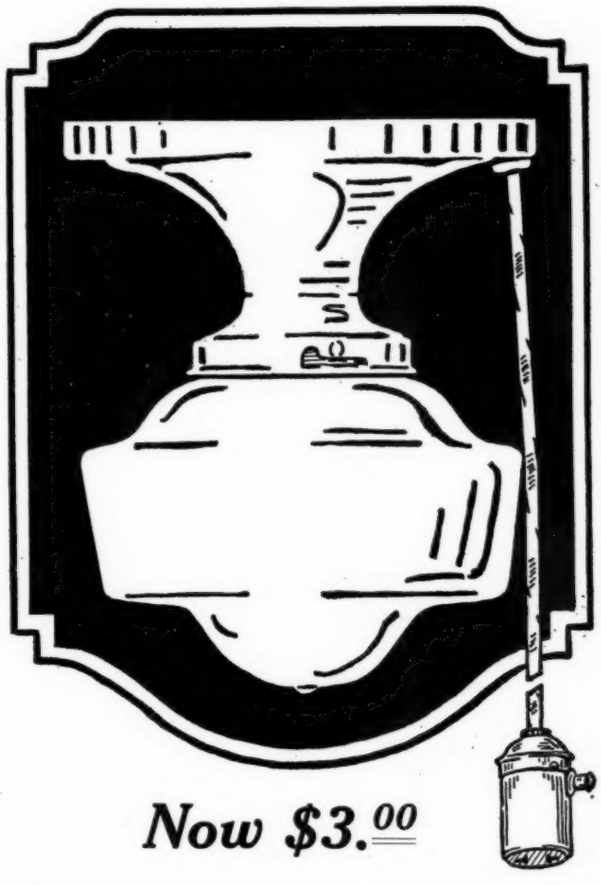
Don't waste time assembling a substitute —buy and sell the Quad Quality Unit with the handy Plug-in-Switch. (Our own nickel plated or Hubbell No. 7020.)

With glassware—Now $3.00 or without at $2.21 in dozen lots.

Ask your jobber or write

QUADRANGLE MFG. CO.
553 W. Monroe Street
Chicago, Ill.

QUAD KITCHEN UNIT



Now $3.00

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

RELAYS

A. C. and D. C. that need no adjustment

Heavy Duty Relays

"Signal" Relays because of their dependability and remarkable performance, are used as standard equipment by the leading electrical manufacturers such as Crouse Hinds Company—Leeds & Northrup Co.—Western Union Telegraph Co.—Western Electric Co., and many others.

When the contractor recommends and installs them he can be sure they will give complete satisfaction. The A.C. Relays are equally dependable as the D.C.; they are free from humming or chattering.

Primary windings—standard voltages 12 to 250 A.C., and 6 to 250 D.C.

Carrying Capacity—Maximum ratings: Power Relays 660 watts, 10 amperes, 250 volts.

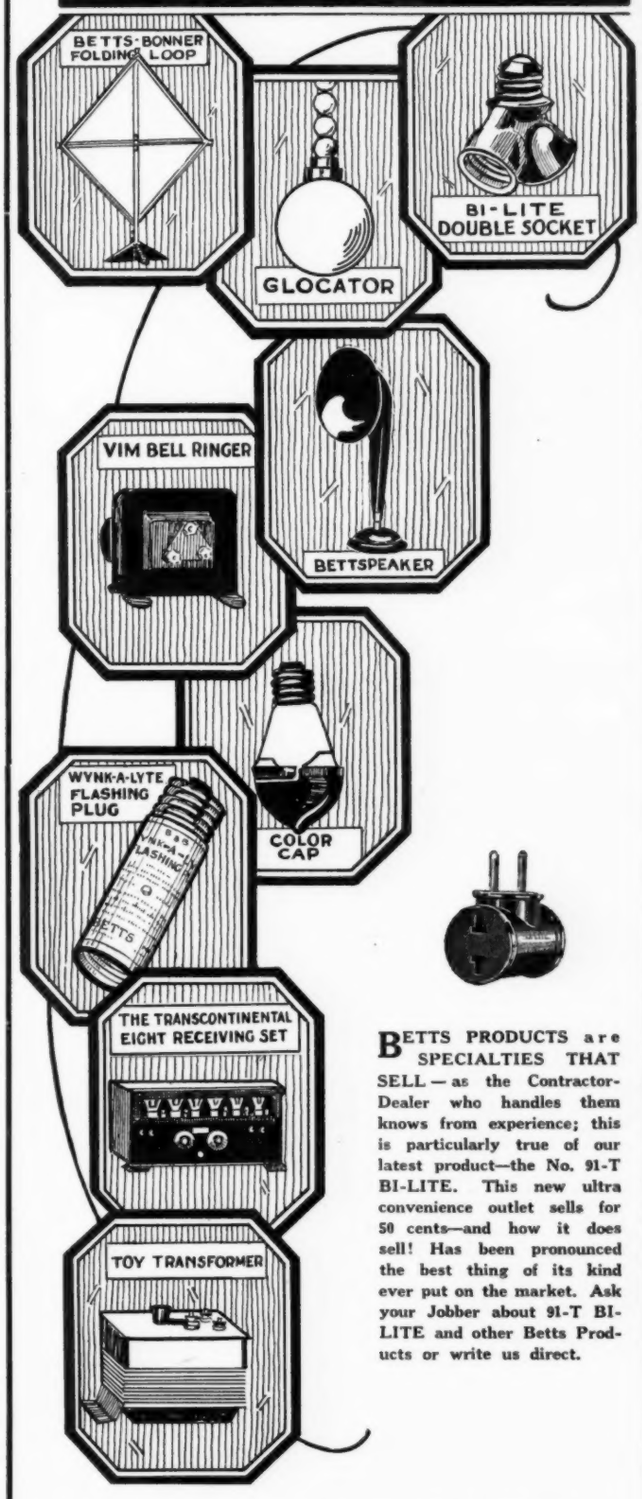
Heavy Duty Relays—1000 watts, 15 amperes, 250 volts.

Write for Bulletins showing our complete line.

Power Relays

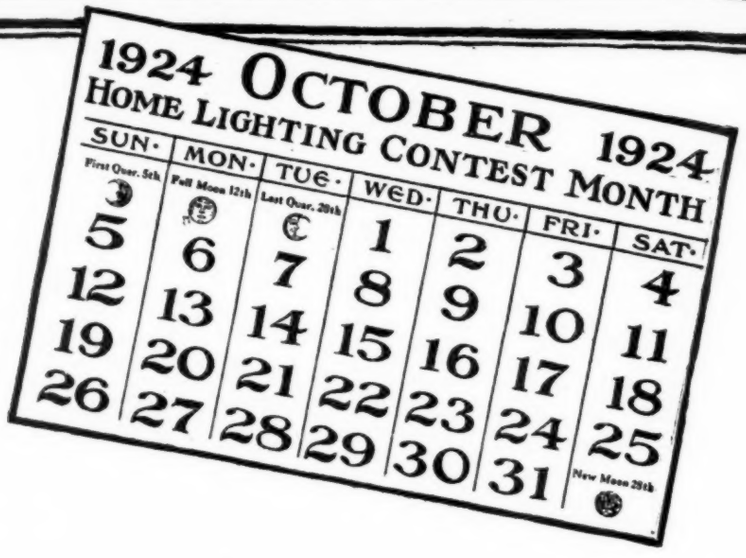
SIGNAL
ENGINEERING & MFG. CO.
533 CANAL ST. NEW YORK, N.Y.

BETTS



BETTS PRODUCTS are SPECIALTIES THAT SELL — as the Contractor-Dealer who handles them knows from experience; this is particularly true of our latest product—the No. 91-T BI-LITE. This new ultra convenience outlet sells for 50 cents—and how it does sell! Has been pronounced the best thing of its kind ever put on the market. Ask your Jobber about 91-T BI-LITE and other Betts Products or write us direct.

BETTS & BETTS
CORPORATION
646 West 43rd St., New York, U.S.A.


1924 OCTOBER 1924
HOME LIGHTING CONTEST MONTH
SUN· MON· TUE· WED· THU· FRI· SAT·
First Quar. 5th
Full Moon 12th
Last Quar. 20th
New Moon 29th
5 6 7 1 2 3 4
12 13 14 8 9 10 11
19 20 21 15 16 17 18
26 27 28 29 30 31 25

You still have time to start a Home Lighting Contest

Don't wait for the other fellow to start. You do it.

Join this great activity to protect the eyesight of our children by showing the people how to properly use electric light in the home.

Send for Plan Book containing methods of operation. Thousands of communities are basing their contests on it.

Time is getting short. See your light company, get in touch with the director of your district, and plan your contest now.

Remember all local contests must conclude by December 1st.

Additional List of Subscribers to the Lighting Educational Committee

L. Beyer & Company, Cleveland, Ohio.
The Bryant Electric Co., Bridgeport, Conn.
Central Tube Company, Pittsburgh, Penn.
Chicago Fuse Mfg. Co., Chicago, Ill.
The Frankelite Company, Cleveland, Ohio.
Garland Mfg. Company, Pittsburgh, Penn.
Herwig Art Shade Lamp Co., Chicago, Ill.
Phil R. Hinkley, Cleveland, Ohio.
Hygrade Lamp Company, Salem, Mass.
The Jefferson Company, Follansbee, W. Va.
The Kayline Company, Cleveland, Ohio.
Moe-Bridges Company, Milwaukee, Wis.
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The Perfectlite Company Cleveland, Ohio.
Eugene F. Phillips Elec. Wke., Ltd. Montreal, Quebec, Can.
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The Okonite Co., Passaic, N. J.
Hubbard & Co., Pittsburgh, Penn.
Corning Glass Co., Corning, N. Y.
E. H. Freeman Electric Co., Trenton, N. J.

HOME LIGHTING CONTEST

The LIGHTING EDUCATIONAL COMMITTEE
680 Fifth Avenue · · · New York, N.Y.

"Wedgtite" Pipe Hangers

TYPE CHP
For Pipe Parallel
to Support

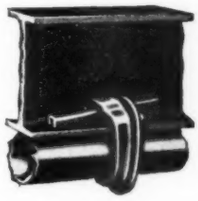
TYPE CHU
For Bolt
Suspension

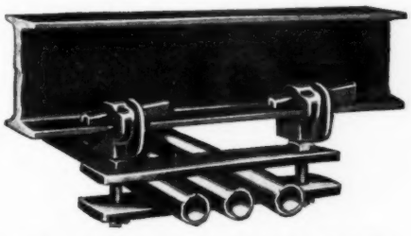
TYPE CHR
For Pipe at a Right
Angle to Support

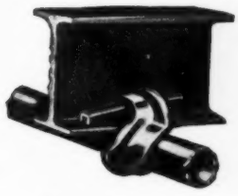
For Attaching Pipe to Structural Shapes

THE WEDGE
Common to All
Types and Sizes

A Hammer the Only Tool Necessary







THE COMPLETED JOB

Listed and described in detail in Bulletin 2058

You will be cordially welcomed at our exhibit
West Baden Springs Hotel
Spaces 11, 12 and 13 September 29 to October 4

CROUSE-HINDS COMPANY
SYRACUSE, N. Y., U. S. A.

SALES OFFICES

NEW YORK
PHILADELPHIA DETROIT
CINCINNATI

BOSTON

CHICAGO
ST. LOUIS MINNEAPOLIS
SAN FRANCISCO

CH 137

CROUSE-HINDS

Hang out your "flag,"
Edison MAZDA Lamp Agents—

THIS ILLUSTRATION shows in mere black and white the handsome swinging sign for Edison MAZDA Lamp Agents.

It carries the new Edison MAZDA Lamp emblem, designed by Maxfield Parrish, the famous artist, who also designed the hood and bracket.

This sign is the "flag" of the Edison MAZDA Lamp Agent. *And it is more.* For, backed by country-wide advertising by the makers of Edison MAZDA Lamps, it is the mark of the quality electrical store.

To the public it signifies: "Here is a reliable electrical merchant. His store is headquarters for Good Lighting." And the beauty and distinction of the sign, plus its ten glowing colors, impress the location of the store on the minds of prospective customers.

Edison MAZDA Lamp Agents, hang out your "flag" this month. And put the new emblem in your windows. For we are advertising it and your store consistently, actively and effectively!

EDISON MAZDA LAMPS
A GENERAL ELECTRIC PRODUCT

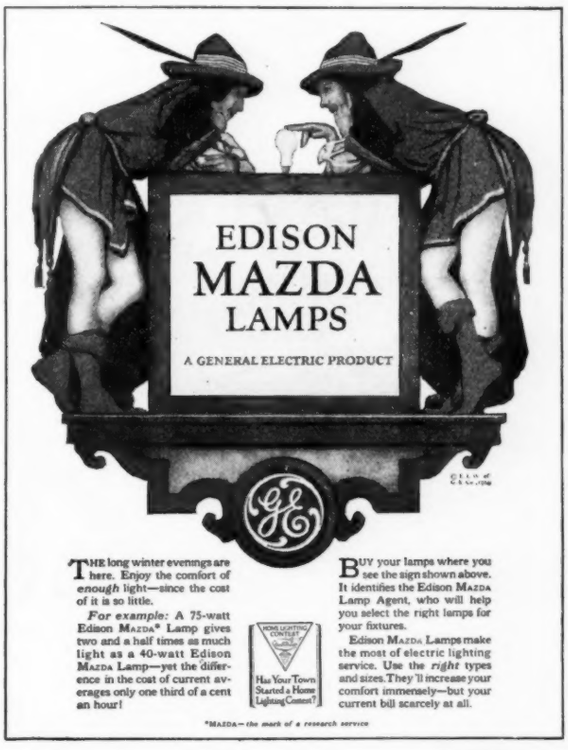
Here's just one example of how we are advertising you

THE November 1st issue of The Saturday Evening Post will carry this advertisement—a page in two colors. Did you ever see a more direct and effective tie-up with the store and the lamp stocks of an electrical dealer?

At the same time the Ladies' Home Journal and Good Housekeeping will be telling women how the *right* Edison MAZDA Lamps, in their present fixtures, will add to the comfort and appearance of their homes. This will stimulate the sale of *more* and *larger* Edison MAZDA Lamps per wired home.

So tie up with this advertising, Edison MAZDA Lamp Agents! It advertises *you* and *your* lamps. Hang out your flag—the swinging sign. Use the new emblem in a window display, as a transparency, as a poster stamp—and in the other forms in which it is furnished.

For particulars, write today to the distributor from whom you get your lamps, or write directly to the Edison Lamp Works of General Electric Company, Harrison, N. J.


EDISON
MAZDA
LAMPS
A GENERAL ELECTRIC PRODUCT
THE long winter evenings are here. Enjoy the comfort of *enough* light—since the cost of it is so little.
For example: A 75-watt Edison MAZDA* Lamp gives two and a half times as much light as a 40-watt Edison MAZDA Lamp—yet the difference in the cost of current averages only one third of a cent an hour!
HOME LIGHTING CONTEST
Has Your Town Started a Home Lighting Contest?
BUY your lamps where you see the sign shown above. It identifies the Edison MAZDA Lamp Agent, who will help you select the right lamps for your fixtures.
Edison MAZDA Lamps make the most of electric lighting service. Use the *right* types and sizes. They'll increase your comfort immensely—but your current bill scarcely at all.
*MAZDA—the mark of a research service

The Maxfield Parrish emblem as the center piece of a window display. Supplied to Agents without charge.

Has Your Town Started a Home Lighting Contest?

A window or door transparency, free to Agents. Also available on poster stamps, on blotters and in electrotypes.

The emblem as one of the two side pieces of a window display and as a counter card. It is free to Agents.

EDISON MAZDA LAMPS

A GENERAL ELECTRIC PRODUCT

Better Service—Bigger Sales

American Blower Co. Fans and Blowers.
Immediate shipment from stock.

National advertising is boosting American Blower sales throughout the country. American Blower dependability is widely known. The closed window season is here and more ventilation is actually needed today than in June and July.

Dominate the ventilating fan market in your locality by pushing A. B. equipment.

Get your share of these profits today. Write us for information.

E. B. LA THAM COMPANY

New York City Distributor

550-552 Pearl St.—96 Worth St., New York City
(Block to Block)

Telephone—Franklin 4870.

LATHAM-NEW YORK

Opportunities

are in these pages every month. Do you take advantage of those offered by our advertisers?

EACH NUMBER OF THIS PUBLICATION IS A COMPOSITE CATALOG OF NEW AND USEFUL THINGS FOR THE CONTRACTOR-DEALER, AND FOR THOSE WHO ARE ENGAGED IN THE ELECTRICAL INDUSTRY

Every person connected with your business should read every issue of this publication—

For Profit

No. 14—2 Conductor, Armored Wire

Highest Grade—Most Flexible

ARMORED WIRE AND CABLES

All National Code Standard

Flexibility and General Construction

just right for the man on the job

Quality Service

500,000 C. M. Cable. Stranded, Tape and Braid

Rubber Covered Wires
Lead Encased Cables
Bare Copper Wire
Magnet Wire
Annunciator Wire
DP Office Wire
Annunciator Cables
Theatre Cables
Deck Cables

Lamp Cord
Fixture Cord
Reinforced Cord
Telephone Cords
Radio Cords

Special Cords and Cordage of all kinds

No. 18 B. & S. 1-32" Parallel Lamp Cord, Glazed Cotton Braid

D. X. ANTENNA—greatest for distance and volume.

CRESCENT ARMORED WIRE CO., Inc.
Crescent Insulated Wire & Cable Co., Inc.
TRENTON, N. J.

Agents in

Boston	Cleveland	St. Louis	Seattle	Dallas
New York	Detroit	Kansas City, Mo.	San Francisco	New Orleans
Philadelphia	Chicago	Portland, Oregon	Los Angeles	Atlanta

NO MEASURING OR SAWING

FOUR NAILS AND A HAMMER SETS THE BOX ALLOWING FOR LATH AND PLASTER.

ANY MAKE OF BOX CAN BE USED.

Our "ALL IN ONE" Covers are something new and saves carrying a variety of covers in stock.

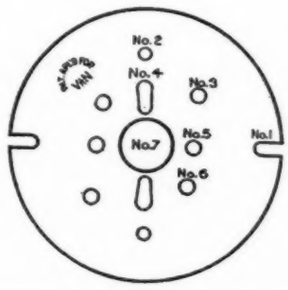
HAVE VANDY EXPLAIN TO YOU WHY HIS FITTINGS COST YOU NOTHING.

ASK YOUR JOBBER.

Manufactured By

B. A. VANDY

187 No. Water St. ROCHESTER, N. Y.



ADVERTISING INDEX

Page

A

A. A. Wire Co. ..... 1 and 94
Adam Electric Co. 112
Alphaduct Co. 97
All-Metal Code 81-84
American Circular Loom Co. 59, 80
American Steel and Wire Co. 100
American Wiremold Co. 77
Ansonia Electrical Co. 99
Appleton Electric Co. 6
Arrow Electric Co. 57
Atlantic Insulated Wire & Cable Co. 101

B

Bard-Parker Co., Inc. 92
Benjamin Elec. Mfg. Co. 64
Benson Co., Alex R. 100
Berry, A. Hall 95
Betts & Betts Corp'n. 103
Block & Co., Lynton T. 94
Boston Insulated Wire & Cable Co. 94
Brandes, Inc., C. 111
Bryant Electric Co 5
Buyers' Guide ..... 88 and 90

C

Central Tube Co. 75, 86
Chicago Fuse Manufacturing Co. 93
Clifton Manufacturing Co. 93
Columbia Metal Hose Works 92
Crescent Armored Wire Co. 109
Crouse-Hinds Co. 105

D

Detroit Insulated Wire Co. 100
Dossert & Co. 70

E

Eastern Tube and Tool Co. 71
Edison Lamp Works 105-107
Emerson Electric Manufacturing Co. 63
Enameled Metals Co. 61
Executive Committee 54

F

Federal Armored Cable Co. 7
Fralick & Co., S. R. 101
Frink, Inc., I. P. 85

Page

G

Garland Mfg. Co. 76
General Electric Co. 8, 9, 10

H

Hart Mfg. Co. 3
Harvey Hubbell, Inc. ..... 72 and 73
Holophane Glass Co. 55

I

Indiana Rubber & Insulated Wire Co. 94

J

Jobbers' Quick Reference 98
Johns-Pratt Co. 56

K

Killark Electric Mfg. Co. 96

L

Latham Co., E. B. 108
Lighting Educational Committee 104
Lighting Fixture Ready Reference 98

M

Market Place 98
Martin & Sons, H. P. 101
Midwest Metal Product Co. 99
Minerallac Electric Co. 96
Mutual Electric and Machine Co. ..... Back Cover

N

National Electrical Supply Co. 98
National Metal Molding Co. ..... 91 and Third Cover
New York Insulated Wire Co. 101

O

Ostrander & Co., W. R. 85

P

Partrick & Wilkins Co. 99
Pass & Seymour, Inc. 4
Pearson Co., J. T. 92
Peerless Electro Prod. Co. 74
Philadelphia Electric Co., Supply Dept. 98
Plainville Elec'l Co. 95
Plainville Elec'l. Prod. Co. 97

Page

Q

Quadrangle Mfg. Co. 102

R

Radio Corp'n of America 67
R-C Outlet 98
Rumsey Electric Co. 98

S

Safety Insulated Wire & Cable Co. 86
Sears, Henry D. 2
Shapiro & Aronson, Inc. 98
Signal Eng. & Mfg. Co. 103
Society for Electrical Development 62
Southern Electric Co. 98
Standard Underground Cable Co. 100
Stanley, Arthur F. 93
Stanley & Patterson ..... Second Cover
Steel City Electric Co. 79, 100
Steelduct Co. 87

T

Tork Company ..... Front Cover
Thomas & Betts Co. 96
Triangle Conduit Co., Inc. 66
Trumbull Electric Mfg. Co. 65
Tubular Woven Fabric Co. 60

V

Vandy, B. A. 110

W

Wadsworth Elec. Mfg. Co. 68, 69
Wahle Co., Inc., Albert 101
Western Electric Co. 58
Westinghouse Elec. & Mfg. Co. 51, 52, 53
Westinghouse Lamp Co. 78
Wheeler Reflector Co. 102
Wurdack Electric Mfg. Co., Wm. 95

Y

Youngstown Sheet & Tube Co. 89

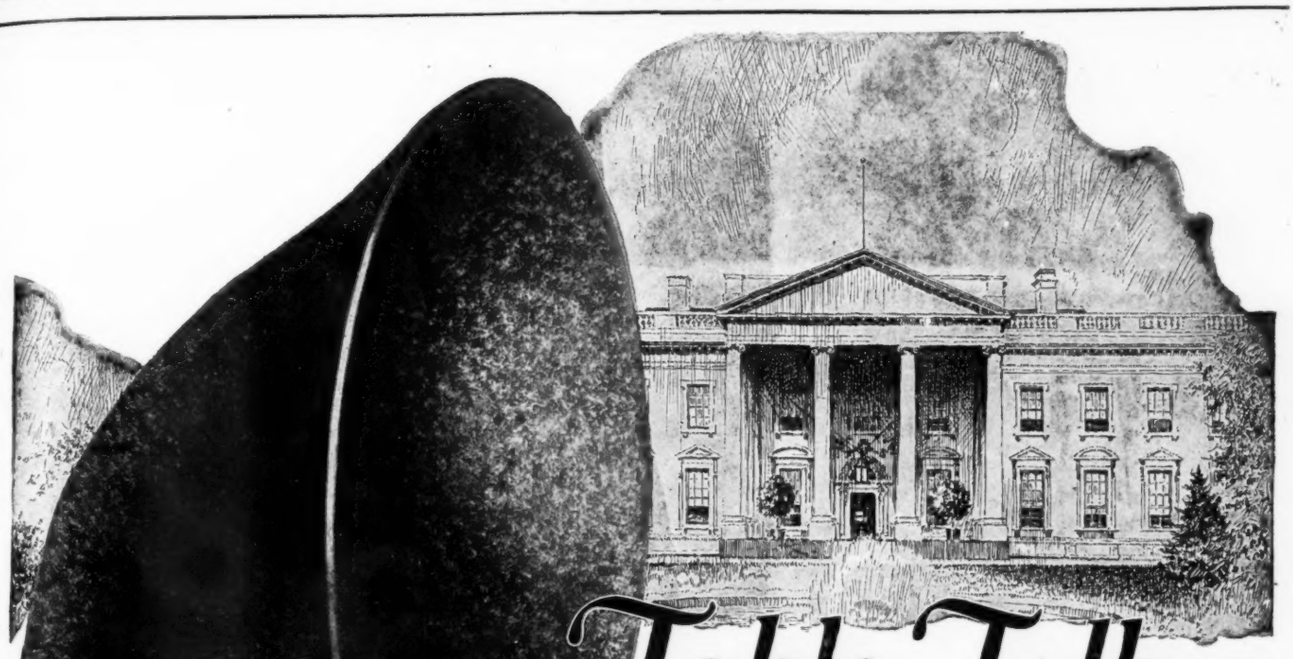


Table-Talker

Keep in touch with National Events

The final desperate spurt as the Presidential campaign draws to a close! The returns as they pile up on election night. Great speeches and vital messages—the inaugural address, the later congressional messages—hard, slow reading, but easy to listen to—with a *Table-Talker.*

And, too, there's everything from football to recipes, from grand opera to market reports, from prize fights to bedtime tales. All brought to your home—shared with your family and your friends by the *real* reproduction of the *Table-Talker.*

PRICE

$10

Brandes

The name to know in Radio

Superior Matched Tone Headset $6 $7 in Canada

Table-Talker $10. 50¢ extra west of the Rockies In Canada $12.50

Navy Type Matched Tone Headset $8 $9 in Canada

ELECTRAGISTS USE THE PRODUCTS OF ADVERTISERS IN THE ELECTRAGIST

The Sign of a Better Job

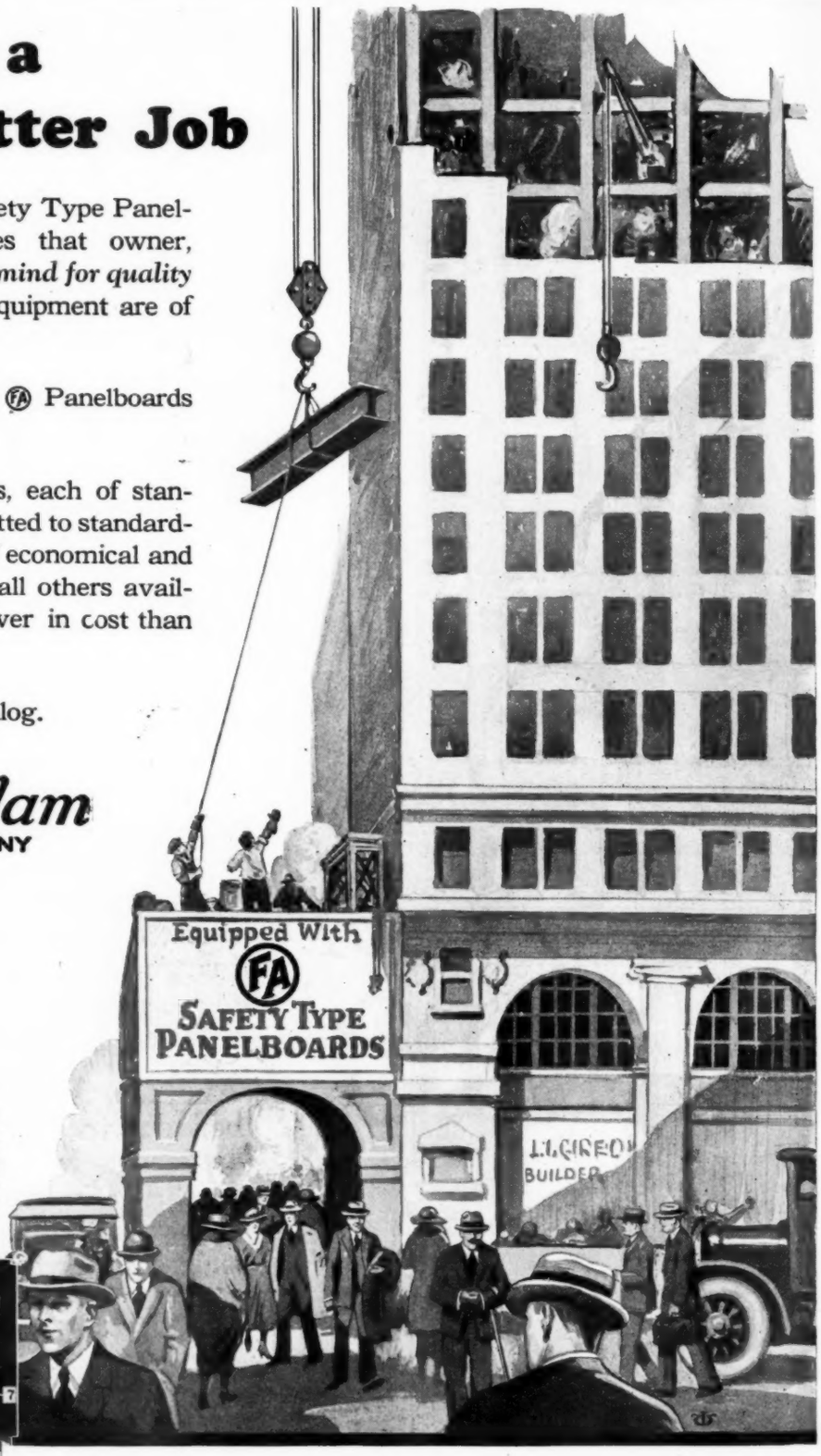
The presence of the FA Safety Type Panelboards in a building indicates that owner, architect and contractor have a *mind for quality* —that all other materials and equipment are of equally high standard.

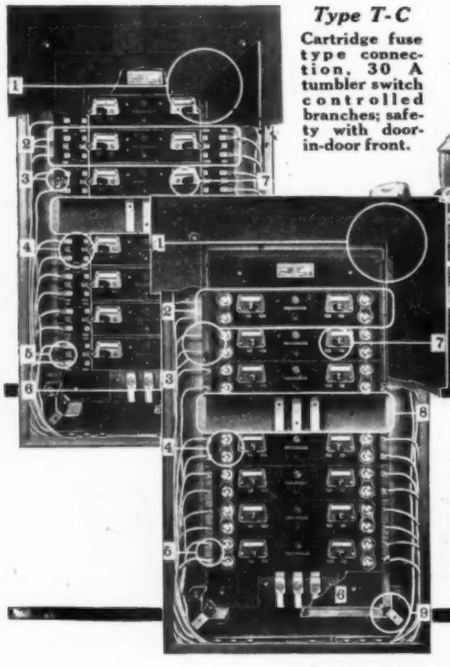
This is why we say that FA Panelboards are "The Sign of a Better Job."

Made in all standard types, each of standardized sectional construction fitted to standardized steel cabinets and certain of economical and accurate installation, they excel all others available. Yet they are actually lower in cost than other makes of panelboards.

Send for new complete catalog.

Frank Adam
ELECTRIC COMPANY
ST. LOUIS





Type T-C
Cartridge fuse type connection, 30 A tumbler switch controlled branches; safety with door-in-door front.

Type T-P
Plug fuse type connection, 30 A tumbler switch controlled branches; safety with one door opening.

Branch Offices:
Detroit, Cincinnati, Denver, New Orleons, Chicago, Minneapolis, Dallas, New York, Indianapolis, Kansas City, Los Angeles, San Francisco, Philadelphia, Pittsburgh, Winnipeg, Can.

Other FA Products
Major System of Theatre Lighting Control: knife switches: safety switches: hanger outlets: reversible-cover floor boxes: A. C. and D. C. Distribution Switchboards.

Wire it with
Ovalflex
OVALFLEX is flat—5/16" thick—and lies snug and tight to every contour. Lay it on the surface without grooving, cutting or boring. Ordinary plaster will cover it.
For re-wiring, cut a shallow groove in the plaster and then plaster right over it.
Safe everywhere—bends flatwise and edgewise—easy to handle—saves time, saves money.
National Metal Molding Company
WORLD'S LARGEST PRODUCERS OF ELECTRICAL CONDUITS AND FITTINGS
1220 Fulton Building, Pittsburgh, Pa.
Represented in All Principal Cities
[19]
5/16"
2
OVALFLEX
A NATIONAL METAL MOLDING PRODUCT
"The Flat Armored Cable"

ST. LOUIS PUBLIC LIBRARY
JUL 12 1944

"BULL DOG"

Safety Switches

BULL DOG Safety Switches are not only entirely safe but extremely strong in construction as well, giving the utmost in satisfactory operation and long life.

The positive quick make as well as quick break is a distinctive feature of all Bull Dog Switches.

You cannot "accidentally throw" a Bull Dog Switch for the lever construction, individual to this make, positively prevents any but intentional and safe operation.

Bull Dog Safety Switches meet every requirement of dependable electrical engineering construction.

Investigate the distinctive features of Bull Dog Switches before you buy or specify.

BULL DOG

MUTUAL ELECTRIC & MACHINE CO.

DETROIT MICH. U.S.A.

Bull Dog Type A Construction underwriters' classification A. Standardized parts, dependable interlocks, reversible blades, all parts keyed together. Rugged construction. Roomy cabinet.